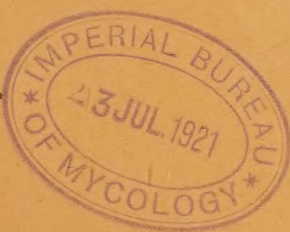




REPORT
ON
THE DEPARTMENT
OF
AGRICULTURE
BARBADOS.



1918-19.

ADVOCATE CO., LTD.
Printers to the Government of Barbados.

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REPORT

ON THE

Department of Agriculture, Barbados,

FOR THE FINANCIAL YEAR 1918-1919.

STAFF.

Superintendent of Agriculture	...	JOHN R. BOVELL, I.S.O., F.L.S., F.C.S.
Assistant Superintendent	...	MILTON S. GOODMAN (acting.)
First Field Assistant	...	ERNEST H. BARROW (acting).
Second Field Assistant	...	WILLIAM E. G. WARD (acting).
Assistant in Charge of Nurseries	...	G. E. LAURIE SPENCER.
Chief Clerk	...	HUGH O. RAMSEY.
Second Clerk	...	M. ESTELLE B. SHEPHERD.
Third Clerk	...	C. HOLMAN B. WILLIAMS.

ESTABLISHMENT.

During the period under review, Mr. J. R. Bovell, Superintendent of Agriculture was absent from the island from November 18 to 29, 1918. In his absence Professor J. P. d'Albuquerque, M.A., etc., the Island Professor of Chemistry, acted as Superintendent of Agriculture. On March 31, 1918 Mr. J. S. Dash, B.S.A., the Assistant Superintendent of Agriculture, tendered his resignation to accept the Directorship of the Sugar Planters' Experiment Station in Guadeloupe, which, on the recommendation of Mr. J. R. Bovell, it had been decided to establish in that island. Mr. Dash, however, remained in office until April 6, 1918. On Mr. Dash resigning, Mr. M. S. Goodman, the First Field Assistant, was appointed to act as the Assistant Superintendent of Agriculture until someone who had the necessary training in Plant Pathology could be appointed to the office. Owing, however, to the difficulty of obtaining a suitable man due to the war, the appointment had not been filled at the end of the financial year (March 31, 1919). On Mr. Goodman being appointed to act as Assistant Superintendent of Agriculture, Mr. E. H. Barrow, the Second Field Assistant, was appointed to act as First Field Assistant, and Mr. W. E. G. Ward, who was at the time one of the Inspectors under the Vegetable Produce Act, was appointed to act as Second Field Assistant.

On March 6, 1918, Mr. G. E. L. Spencer, the Assistant in charge of the Nurseries, obtained six weeks vacation leave of absence and left for Guadeloupe. At the expiration of his leave he tendered his resignation, having accepted an appointment in the Sugar Planters' Experiment Station in that island. Mr. Elliot H. Chandler who had some knowledge of agricultural work, was, on Mr. Spencer going on leave, appointed to act for him.

EXPENDITURE.

	£.	s.	d.
Salaries	1,760	3	3
Incidentals for sugar-cane, cotton and other experiments	621	12	6
Upkeep of Botanic Station	133	9	5½
Fumigation of Plants	4	5	9
Purchase of Goats	3	12	5½
Pay and travelling expenses in connection with sugar-cane experiment plots	1	16	0
Purchase of apparatus, books, &c.	14	2	2
Exhibition (local)	62	16	9
Total	2,601	18	4½

RECEIPTS.

Plants in pots	£ 50	15	0½
Canes, cotton, cassava, yams, &c., grown on lands rented from Waterford Plantation	42	1	3
Sundries:—Collecting and drying mahogany seeds tamarinds sold from trees at Pavilion, &c.	2	17	0½
Total	95	13	4

REPAIRS TO BUILDINGS, ETC.

During the year under review minor repairs were executed to Codrington House and the out buildings there, where the nurseries for the seedling sugar-canes and other plants are situate. The open space between the palm house and the potting house was concreted and laid out in divisions with intervening walks. This has greatly added to the appearance of the nurseries and has considerably reduced the cost of their upkeep as no weeding is now necessary, the concrete preventing the growth of the weeds between the pots and in the walks. Minor repairs were carried out to the office and outbuildings in Bridgetown and the outer woodwork was painted.

DISTRIBUTION OF PLANTS, CUTTINGS, SEEDS, ETC.

The receipts for the sale of plants, etc., for the year 1918-19 amounted to £95 13. 4.

The plants and seeds distributed locally and abroad for the year are as follows:—

PLANTS.	
Breadfruit ...	11 plants
Banana ...	4 "
Ficus Benjamina ...	22 "
Fig ...	4 "
Guava ...	23 "
Lemon ...	6 "
Lime ...	30 "
Mango (grafted) ...	140 "
Miscellaneous ...	119 "
Palms & ornamental plants ...	590 "
Papaw ...	9 "
Pear (grafted) ...	18 "
Plants for Arbor Day ...	1,626 "
Sapodilla ...	5 "
Shaddock ...	2 "
Sudan grass ...	Several clumps.
Sugar apple ...	4 plants.

CUTTINGS, SEEDS, ETC.	
Cane cuttings (of these 14 barrels, 23 cases and 21 tin cylinders containing approximately 5,190 cuttings were packed in damp powdered charcoal.)	
	102,545 cuttings.
Cane seeds ...	15 packets.
Cassava ...	{ 24 cuttings. 8 bundles.
Cotton seed ...	2,532 lb.
Corn Guinea ...	160 lb.
„ Indian ...	6 ears.
Eddoes ...	{ 18 corms. 510 cormels.
Macaw Palm ...	3 lb.
Mahogany ...	2 barrels.
Miscellaneous ...	53 packets.
Pigeon peas ...	4 pints.
Sweet potatoes—about 5 lb. small tubers each of 7 varieties.	
Sweet potato cuttings ...	12 bags.
Yams ...	286 lb., 3 barrels, 32 yams 76 yam plants.

PLANTS ETC., IMPORTED AND DISTRIBUTED LOCALLY.	
Asparagus roots ...	200
Lily bulbs ...	12
Onion seed ...	12 ounces.
Orange* ...	14 plants.
Seeds of flowering plants ...	25 packets.
Vegetable seed ...	22 packets.

*Arrived in bad condition and died before they could be distributed.

EXPERIMENTS WITH SUGAR-CANES.

MANURIAL EXPERIMENTS.

In addition to the experiments carried out at Dodds with different varieties of the sugar-cane, experiments were carried out with different chemical fertilizers, the same fertilizers having now been applied each year for the past twenty-six years, i.e., thirteen times in Bay Tree field and thirteen times in Summerville field. These results were becoming more and more valuable as each year went by, up to six years ago, and were indicative of the lines on which sugar-canes grown under similar conditions to those obtaining at Dodds should be manured. Unfortunately, however, during the past six years the sugar-canes on the manorial plots have been attacked by the larvae of the root borer, *Diaprepes abbreviatus*, L., and the brown hard-back, *Phytalus smithi*, Arrow, to such an extent that it is impossible to draw any definite conclusions from the results obtained. Even before the canes were fully matured some were seen to be withering, and these clumps, amounting altogether to 135 had to be reaped or they would have died and been lost. From around and in the basal portions of these clumps 1,031 larvae of the root borer and 208 larvae of the brown hard-back were obtained. As soon as the remainder of the canes were matured they were reaped in the usual manner, and the basal portions of each clump were dug up, cut into pieces, and the larvae, where present in or around such basal portions, were killed. At the same time the old cane holes were dug out two feet square and where possible a foot deep, and all the larvae found in the soil killed. The following table shows the number of larvae of the root borer and the brown hard back found in each plot.

TABLE I.

TABLE SHOWING THE NUMBER OF THE LARVAE OF THE ROOT-BORER AND BROWN HARD-BACK FOUND IN EACH MANURIAL PLOT.

Plots.	Root borer.	Brown hard-back.	Total.	Plots.	Root borer.	Brown hard-back.	Total.
A. 1	305	94	399	B. 1	151	61	312
A. 2	109	44	153	B. 2	194	60	254
A. 3	235	46	281	B. 3	257	73	330
A. 4	267	55	322	B. 4	206	55	261
A. 5	299	60	359	B. 5	183	55	238
A. 6	308	58	366	B. 6	200	83	283
A. 7	209	50	259	B. 7	203	72	275
A. 8	159	49	208	B. 8	215	54	269
A. 9	276	64	340	B. 9	390	75	465
A. 10	314	81	395	B. 10	286	53	339
A. 11	293	80	373	B. 11	233	70	303
A. 12	252	70	322	B. 12	162	48	240
A. 13	172	58	230	B. 13	205	38	243
	3,108	809	3,917		2,815	797	3,612

As will be seen from the above 6,023 root borers and 1,606 brown hard-backs were killed, making a total of 7,629 root borers and brown hard backs destroyed; as will be also seen from the table, the number of larvae of the root borers and the brown hard backs attacking the sugar canes in each plot varied from 153 in the case of plot A. 2 to 465 in the case of plot B. 9. It will thus be understood how impossible it is to compare the results of the various manorial plots.

As it may be of interest it may be mentioned that for the season 1913-15 8,122, and for the season 1915-17 8,227 larvae of the root borer and the brown hard back were similarly destroyed when the basal portions of the sugar-canes grown on the manorial plots were dug up. As will be observed the number of these pests for this season was only slightly less than that for each year for the two previous seasons.

The monetary loss sustained from the attacks of these pests at present, although the injury is not as great as in some other countries where the same and similar beetle larvae are attacking the sugar-canes, is still considerable. To give some idea of what the loss is, it may be stated that, before the sugar-canes on the manurial plots at Dodds were fully matured this year, the 165 clumps attacked by the 1,239 larvae of the two pests, had to be reaped as the tops commenced to wither. The average weight of each cane in the withered clumps was 5.03 lb. and in spite of the fact that 6,390 larvae were found in the remainder of the plots, the average weight of each cane was 5.58 lb. In other words, although a large number of canes in the remaining plots had also been attacked by the two pests, still as a smaller percentage was attacked they weighed on the average .55 lb. per cane more than those in the 165 clumps cut first. The loss, therefore, at this rate was 4.36 tons of canes per acre. As the average price received per ton of sugar-canes for those sold from the lands of the Government Industrial Schools during 1919 was \$8.94, the minimum loss sustained from the attacks of these pests was \$38.98 per acre. If there had been unattacked plots to compare the results with it would be seen that the loss from the attacks of these two pests was very much greater.

The detailed results of the manurial experiments are given in the report on the sugar-cane experiments for the season 1917-1919, and so there is no need to reproduce them in this report particularly as, owing to the attacks of the root borer and the brown hard back, they are practically valueless.

EXPERIMENTS WITH THE DIFFERENT VARIETIES OF THE SEEDLING AND OTHER SUGAR-CANES.

During the period under review experiments were carried out on fifteen estates in different districts of the Island with different varieties of the sugar-cane grown from seed obtained locally and from cuttings and seedlings and other varieties of the sugar-cane obtained from other countries and tested in comparison with the White Transparent and B. 6450 as the standard canes. The experiments have been fully dealt with in the sugar-cane experiment report, so that there is no need to do more than to refer to them here. Owing to suitable weather conditions the usual number of seedling sugar-canes were obtained and 2,946 of the more vigorous were planted in Pear Tree field at Waterford Plantation. Since 1898 a total of 92,675 sugar-canes have been raised from seed and potted out; of these 7,401 reached the second stage, and of these latter 3,298 were under cultivation during the season 1917-19, and 767 variety and manurial experiment plots were reaped and the juice analysed. It is to be regretted that owing to the prevalence of the root borer and the brown hard back in a great many of the fields in which the experiments were carried out during the season under review, the results of the sugar-cane experiments for the year are practically valueless.

For the season under review in the black soil districts, the average yield of the White Transparent from seventeen plots was 4,172 lb. of muscovado sugar per acre. W. No. 2, which came first, gave a yield of 8,706 lb. of muscovado sugar, an increase of 4,534 lb. over the White Transparent and an increased monetary gain of \$205.39. Ba. 11403 came next with 8,536 lb. of muscovado sugar, an increase of 4,184 lb. worth \$197.69 per acre more than the White Transparent. Ba. 8409 came third with a yield of 7,738 lb. of muscovado sugar, an increase of 3,566 lb. of the value of \$161.54 per acre more than the White Transparent. B. H. 10 (12) gave a yield of 7,640 lb. of muscovado sugar, an increase of 3,468 lb., equal to an increased monetary gain of \$157.10 per acre over the White Transparent. B.S.F. 12 (50) came next with a yield of 7,430 lb. of muscovado sugar, an increase of 3,258 lb. per acre, worth \$147.59 more than the White Transparent. Two other varieties, Ba. 597 and Ba. 6032 gave yields of 7,154 lb. and 7,079 lb. of muscovado sugar, and monetary gains of \$135.08 and \$131.69 respectively over the White Transparent. The Bourbon yielded 2,769 lb. of muscovado sugar per acre less than the White Transparent and a monetary loss equal to \$125.44 was sustained.

In some instances there are one or two plots of the inferior varieties apparently giving higher results than some of the better ones. The fact is that some of these varieties grown in a very fertile district are compared with other varieties grown in perhaps a dozen districts some of which are in parts of the island where the rainfall is below the average. To give an example, W. No. 2 on two plots grown in the same field gave an average yield of 8,706 lb. of muscovado sugar per acre; B.H. 10 (12), a decidedly better variety, yielded on the average from twelve plots, in different fields on different estates 7,640 lb.

of muscovado sugar per acre, that is 1,066 lb. less than the W. No. 2. If, however, the average yield per acre of the B. H. 10 (12) is compared with the yield of the W. No. 2 when grown together in the same field and under the same conditions, the B. H. 10 (12) yielded 3,541 lb. of muscovado sugar more than the W. No. 2.

Another instance is the Ba. 6032; the yield of this cane on the average from thirteen plots, in different fields on different estates is, 7,079 lb. of muscovado sugar per acre, that is 1,627 lb. less than W. No. 2. If, however, the average yield per acre of the Ba. 6032 is compared with the yield of the W. No. 2 when grown together in the same field and under the same conditions, the Ba. 6032 yielded 2,498 lb. of muscovado sugar per acre more than the W. No. 2.

On the red soils the average yield of the White Transparent as plant canes was 5,352 lb. of muscovado sugar per acre, while some of the better seedling canes gave much higher yields. For instance, the B. H. 10 (12) gave a yield of 9,838 lb. of muscovado sugar per acre, an increased return compared with the White Transparent of 4,486 lb., equal in value to \$203.22. B. S. F. 12 (27) came next with 8,898 lb. of muscovado sugar per acre, an increase of 3,446 lb., of the value of \$160.63. With the Ba. 6032 the increase was 2,989 lb. of muscovado sugar per acre, of the value of \$135.40. For the Ba. 11569 the increase was 1,965 lb. and for the B. S. F. 12 (34), 1,982 lb. of muscovado sugar, worth \$89.01 and \$87.52 respectively, per acre more than the White Transparent. Five other varieties, Ba. 7924, Ba. 2471, B. S. F. 12 (24), B. 6450 and B. 3922, gave increased yields varying from 1,904 lb. to 326 lb. of muscovado sugar per acre valued from \$86.25 to \$14.77 respectively more than the White Transparent.

In the red soil districts as plants, first and second ratoons the White Transparent gave 13,855 lb. of muscovado sugar, worth at \$4.53 per 100 lb., \$627.63 for the three crops. B. H. 10 (12) gave 23,365 lb. of muscovado sugar, an increase of 9,510 lb. worth for the three crops \$430.80 more than the White Transparent. Ba. 7924 came next with a yield of 17,878 lb. of muscovado sugar, an increase of 4,023 lb. worth \$182.21 more than the White Transparent. The Ba. 6032 gave 17,779 lb. of muscovado sugar and an increased monetary return of \$177.76 more than the White Transparent. Four other varieties, B. 3922, Ba. 12079, B. 6450 and Ba. 2471 gave increases of 4,023 lb., 1,773 lb., 1,406 lb. and 1,003 lb. worth \$80.82, \$63.69, \$61.25 and \$45.44 respectively more than the White Transparent from the three crops.

The average results of some of the better varieties for the past five years in the black soils as compared with the White Transparent are given in Table V. It will be seen therefrom that the White Transparent which came out fortieth amongst all the varieties cultivated, gave an average yield of 4,938 lb. of muscovado sugar per acre for the five years 1915-1919. The B. H. 10 (12) which heads the list gave a yield of 8,161 lb. of muscovado sugar, an increase of 3,253 lb. per acre, worth at \$3.65 per 100 lb., the average price at which muscovado sugar sold for that period, \$118.73 more per acre per annum than the White Transparent. The Ba. 6032 gave an increased yield of 2,467 lb. of muscovado sugar worth \$87.86 per acre per annum more than the White Transparent. W. No. 2 gave a yield of 7,338 lb. of muscovado sugar, an increase of 2,400 lb. worth \$87.60 per acre per annum more than the White Transparent. Ba. 11403 and Ba. 8069 gave increased yields of 2,313 lb. and 2,268 lb. of muscovado sugar, worth respectively \$84.42 and \$82.78 more per acre per annum than the White Transparent. Three varieties, Ba. 11569, Ba. 12079 and B. 6450 gave increased yields of 2,016 lb., 1,664 lb., and 1,600 lb., worth \$73.58, \$60.74 and \$58.40 respectively more per acre per annum than the White Transparent.

In the red soil district for the five years as plant canes the White Transparent gave an average yield of 4,772 of muscovado sugar per acre per annum. Ba. 6032 which heads the list, gave an average yield of 7,593 lb. of muscovado sugar per acre, an increase of 2,821 lb., worth \$102.97 more per acre per annum than the White Transparent. B. 6450 came next with 6,998 lb. of muscovado sugar, an increase of 2,226 lb., worth \$81.25 more per acre per annum than the White Transparent. Ba. 2471 and B. 3922 gave increased yields of 1,723 lb. and 1,329 lb. worth respectively \$62.89 and \$48.51 more per acre per annum than the White Transparent.

TABLE II.

SELECTED AND OTHER VARIETIES THAT HAVE BEEN UNDER CULTIVATION
FOR SOME YEARS, FOR THE SEASON 1917-1919.

*Black Soils**Plant Canes.*

Name or No. of cane.	No. of experiments.	Muscovado sugar lb. per acre.	Increase or decrease in value per acre compared with the White Transparent.	
			\$	c.
W. No. 2	2	8,706	205	39
Ba. 11408	1	8,536	197	69
Ba. 8409	1	7,738	161	54
B.H. 10 (12)	12	7,640	157	10
B.S.F. 12 (50)	1	7,430	147	59
Ba. 597	1	7,154	135	08
Ba. 6032	13	7,079	131	69
W. Transparent	17	4,172		
Bourben	1	1,403	-125	44

TABLE III.

SELECTED VARIETIES FOR THE SEASON 1917-1919

*Red Soils**Plant Canes*

Name or No. of cane.	No. of experiments.	Muscovado sugar lb. per acre.	Increase or decrease in value per acre compared with the White Transparent.	
			\$	c.
B. H. 10 (12)	9	9,838	203	22
B. S. F. 12 (27)	2	8,898	160	63
Ba. 6032	9	8,341	135	40
Ba. 11569	5	7,317	89	01
B.S.F. 12 (34)	4	7,284	87	52
Ba. 7924	9	7,256	86	25
Ba. 2471	4	6,758	63	69
B.S.F. 12 (24)	5	6,331	44	35
B. 6450	9	6,293	42	63
B. 3922	6	5,678	14	77
W. Transparent	9	5,352		
Ba. 1:079	2	4,107	-56	40

TABLE IV.

SELECTED VARIETIES.

PLANT CANES, FIRST AND SECOND RATOONS REAPED DURING THE CROP SEASON OF 1919.

Red Soils.

Name or No. of cane.	No. of ex- periments.	Saccharose lb. per acre.			Total musco- vado yield for 3 crops.	Increase in value per acre com- pared with W. Trans- parent.
		Plants.	1st ratoons	2nd ratoons.		
B.H. 10 (12) ...	24	12,298	8,965	7,948	23,865	\$ C. 480.80
Ba. 7924 ...	24	9,070	7,442	5,835	17,878	182.24
Ba. 6032 ...	22	10,426	7,166	4,682	17,779	177.76
B. 3922 ...	16	7,098	6,799	5,638	15,628	80.32
Ba. 12079 ...	6	5,134	8,823	5,119	15,261	63.69
B. 6450 ...	24	7,866	6,425	4,718	15,207	61.25
Ba. 2471 ...	10	8,448	6,178	3,946	14,858	45.44
W. Transparent	24	6,690	5,684	4,945	13,855	...

TABLE V.

SELECTED VARIETIES FOR THE FIVE YEARS 1915-1919

*Black Soils.**Plant Canes.*

Name or No. of cane.	No. of experiments.	Muscovado sugar lb. per acre.	Increase or decrease in value per acre compared with the White Transparent.
B.H. 10 (12) ...	47	8,191	\$ C. 118 73
Ba. 6032 ...	72	7,845	87 86
W. No. 2 ...	10	7,838	87 60
Ba. 11403 ...	5	7,251	84 42
Ba. 8069 ...	5	7,206	82 78
Ba. 11569 ...	19	6,954	73 58
Ba. 12079 ...	8	6,602	60 74
B. 6450 ...	96	6,538	58 40
W. Transparent	93	4,938	...
<i>Red Soils.</i>		<i>Plant Canes.</i>	
Ba. 6032 ...	31	7,593	102 97
B. 6450 ...	38	6,998	81 25
Ba. 2471 ...	14	6,495	62 89
B. 3922 ...	30	6,101	48 51
W. Transparent	37	4,772	...

EXPERIMENTAL ERROR.

The experiments started during the reaping season of 1912 for the purpose of ascertaining what is the probable error incident to carrying out the sugar-cane experiments in Barbados were continued this year. For this purpose the two centre rows of four four-row plots of B. 6450 alongside one another in North Grape Tree field at Summervale plantation, where the whole field had been treated alike were reaped separately, the juice analysed, and the results calculated to the acre like all the seedling variety experiment plots. The results are

given in Table VI. As will be seen from the table the difference in the yield of the plot which was highest and that which was lowest amounted this year to 546 lb. saccharose per acre or 7.01 per cent.

The difference between the highest yield and the average of the four plots was 216 lb. of saccharose or +2.85 per cent. and between the lowest yield and the average of the four plots was 330 lb. of saccharose or -4.36 per cent.

TABLE VI.

SUMMERVALE PLANTATION—NORTH GRAPE TREE FIELD.

Plant Canes 1917—1919.

Name or No. of cane.	Canes, tons per acre.	Lb per gallon of			Quotient of purity.	Glucose ratio.	Gallons juice per acre.	Saccharose lb. per acre.	Per cent. above or be- low the average, which is 757.4 lb. sacch. per acre.
		Saccharose.	Glucose.	Solids not sugar.					
B. 6450 Plot I	28.78	2.09	.066	.194	88.94	3.16	3620	7563	- 0.11
B. 6450 Plot II	30.07	2.17	.056	.184	90.04	2.58	3590	7790	+ 2.85
B. 6450 Plot III	28.13	2.09	.064	.196	88.94	3.06	3466	7244	- 4.36
B. 6450 Plot IV	28.65	2.12	.063	.187	89.45	2.97	3630	7696	+ 1.61

LOSS OCCASIONED TO THE SUGAR-CANE GROWER AND THE FACTORY OWNER BY
THE ATTACKS OF THE MOTH BORER (*Diatraea saccharalis*, Fab.)

As it has been evident for some time that the moth borer (*Diatraea saccharalis*, Fab.) is the cause of heavy loss to the sugar-cane growers and the factory owners, experiments were carried out this year on three estates to obtain some idea of what this loss is. In 1913 a similar effort was made, and the results were laid before the Barbados General Agricultural Society and published in the report of the sugar-cane experiments for the season 1911-1913. On that occasion it was found that on the average of three experiments 29.8 per cent. of the canes grown in the plots tested were dead. There is no doubt that some of these canes were injured by the root fungus (*Marasmius sacchari*). The opinion, however, which was formed at the time was that the loss was mainly due to the attacks of the moth borer. At the price of \$10 per ton for the canes the loss would have been \$61.90 per acre. This year nine experiments on three estates were carried out to ascertain what the loss due to the moth borer was on those estates. The estates are designated by numbers. On No. 1 estate two experiments were carried out, on No. 2 three, and on No. 3 four. On each estate after the canes were cut the attacked canes from each plot were separated from those that were not attacked, each lot was then weighed and the numbers ascertained. In each case it was intended to send samples of 105 lb. each of attacked and unattacked canes to the Government Laboratory for analysis; but unfortunately, owing to the number attacked, a sufficient number of canes to give a full sample was only obtained from three plots. From two plots no unattacked canes were obtained, from another two only one unattacked cane was obtained from each plot and from the remaining two plots only five and fourteen canes respectively were obtained. To ascertain what would have been the weight of an acre of canes if none of them had been attacked, the total number of canes obtained per acre was multiplied by the average weight of an unattacked cane. The weight per acre of the unattacked and the attacked canes was then deducted from the result thus obtained, the difference being the loss caused by the attacks of the moth borer. To ascertain the loss sustained by the factory owner, samples of the unattacked and the attacked canes were crushed separately, the per cent. of juice and the composition of the juice ascertained. As can be easily understood, the attacked canes had less juice in them and it was inferior in quality to that of the unattacked canes. The average results of the plots are given in Tables VII and VIII.

TABLE VII.

LOSS IN FIELD.

	Average per cent of canes attacked.	Tons, canes per acre.	Average loss tons canes per acre due to attack.	Average loss @ \$10 per ton.
Average weight of canes if none had been attacked	...	38.01	...	...
Average not attacked	...	2.16	...	...
Average attacked	94.87	29.60	6.25	62.50

TABLE VIII.

LOSS IN FACTORY.

	Saccharose lb. per acre.	Average loss saccharose lb. per acre due to attack.	Average loss as muscovado sugar and its molasses.
			\$ c.
Average saccharose from canes if none had been attacked	8,678	...	...
Average not attacked	577	...	...
Average attacked	7,516	585	31 80

As on one estate all the canes in both of the plots of the B. 6450 were attacked by the moth-borer, the results have not been included in the above table.

In last year's report the results obtained with four of the newer varieties, viz: B. S. F. 12 (24), B. S. F. 12 (27), B. S. F. 12 (34) and B. S. F. 12 (45) were given in Table IV. This year owing to the fact that nearly all the sugar-canes growing in these plots were made into cuttings for planting purposes, the remainder were not enough for carrying out sufficiently reliable tests.

As a considerable number of planters are now growing three of the newer seedling sugar-canes, viz:—B. H. 10 (12), Ba. 6032 and Ba. 7924 it may not be without interest if the results obtained with these three sugar-canes are compared with the White Transparent and B. 6450. Each of these newer varieties was grown on the same estate, in the same field and under the same conditions as the White Transparent and B. 6450. The results are given in Table IX. As will be seen therefrom, under the conditions mentioned above, B. H. 10 (12) yielded on the average for 6 years from 48 plots 10,852 lb. of saccharose or 4,100 lb. per acre more than the White Transparent and 2,314 lb. per acre more than the B. 6450. Ba. 6032 under similar conditions for five years from seventy-six plots yielded 2,987 lb. saccharose per acre more than the White Transparent and 1,020 lb. per acre more than B. 6450. Ba. 7924, under similar conditions for six years from forty-two plots yielded 2,517 lb. saccharose per acre more than the White Transparent and 715 lb. saccharose more than B. 6450. Expressed in percentages, the B. H. 10 (12) gave an increased yield on the average for six years over the White Transparent of 60.7 per cent and over the B. 6450 of 27.1 per cent. The Ba. 6032 gave an increased yield on the average over the White Transparent for five years of 49.5 per cent and over the B. 6450 of 12.7 per cent, and the Ba. 7924 gave an increased yield on the average for six years over the White Transparent of 38 per cent. and over the B. 6450 of 8.5 per cent.

TABLE IX.

WHITE TRANSPARENT AND B. 6150 COMPARED WITH B. 6150 (12) GROWN IN THE SAME FIELDS DURING THE SEASONS 1912-14 TO 1917-19.

Name or No. of cane.	No. of years.	No. of cuttings.	Average yield per acre.	Per cent. of sucrose in juice.	Normal juice		Quotient of purity.	Gross yield during the seasons 1912-14 to 1917-19.	Saccharose lb. per acre.	Increase in saccha-rose lb. per acre over White Trans-parent.	Increase in saccha-rose lb. per acre over B. 6150.	Per cent. of increase over White Trans-parent.
					Saccharose.	Glucose.						
W. Transparent	...	48	35.70	62.27	2.05	.070	89.76	3.49	6.752	...	...	...
B. 6150	...	48	33.49	63.55	2.07	.064	89.62	6.13	8.538	1.786	...	27.1
B.H. 10 (12)	...	48	35.16	61.85	2.33	.063	91.14	2.71	10.852	4.160	2,814	60.7
White Transparent and B. 6150 compared with B.H. 10 (12)	...	48	35.16	61.85	2.33	.063	91.14	2.71	10.852	4.160	2,814	60.7
W. Transparent	...	76	34.32	59.96	1.98	.069	89.62	3.51	6.034	...	...	...
B. 6150	...	76	30.86	62.40	2.02	.062	88.92	3.23	8.931	1,967	...	12.7
Ba. 6032	...	76	34.06	61.05	1.99	.065	89.25	3.34	9.021	2,987	1,020	49.5
White Transparent and B. 6150 compared with Ba. 6032	...	76	34.06	61.05	1.99	.065	89.25	3.34	9.021	2,987	1,020	49.5
W. Transparent	...	14	35.6	61.98	2.00	.081	88.50	4.13	6.936	...	...	...
B. 6150	...	42	32.57	63.55	2.00	.078	88.28	3.99	8.428	1,802	...	8.5
Ba. 7024	...	42	33.57	61.63	2.03	.039	90.41	1.91	9.143	2,517	715	38.0

EXPERIMENTS WITH CUTTINGS MADE FROM PLANT CANES AND FIRST AND SECOND RATOONS.

As the matter is one of very great importance to the planters, experiments were, with the kind permission of Mr. G. Elliot Sealy, M.C.P., carried out at Lemon Arber estate with the object of ascertaining whether there is any difference in the yield of canes grown from cuttings made from plant canes, and from cuttings made from first and second ratoon canes. The results are given in Table X. As will be seen therefrom, they are not in accordance with results previously obtained, inasmuch as cuttings made from first ratoons have this year given better results than cuttings made from plant canes. The difference, however, 210 lb. of saccharose per acre is well within the sugar cane plot experimental error. Furthermore the sugar-canes on this estate were this year very badly attacked by the moth-borer, which also may have affected the yield on the plots. While the cuttings made from the plant canes have given a lower yield than those made from first ratoons, on the other hand, the cuttings made from plant canes have given a much higher yield per acre than those made from second ratoons.

EXPERIMENTS WITH THE WHITE TRANSPARENT, B. 6450, BA. 6032, B. H. 10 (12) AND W. NO. 2 AT WATERFORD PLANTATION.

In 1916, Messrs. F. A. C. Collymore and E. W. Mahon had planted in Burnt Field at Waterford plantation, four plots of half-an-acre each, (i.e., there were two acres of each variety) of the following five sugar canes, viz., White Transparent, B. 6450, Ba. 6032, B. H. 10 (12) and W. No. 2. The results obtained with the five varieties, as plant and ratoon canes are given in the following table.

TABLE XI

WATERFORD PLANTATION—BURNT FIELD—EXPERIMENTS WITH WHITE TRANSPARENT, B. 6450, BA. 6032, B. H. 10 (12) AND W. NO. 2.

FOR THE TWO SEASONS 1916-1918 AND 1917-1919

Name or No. of cane.	Plant canes tons per acre.	First ratoons tons per acre.	Total for the two crops.	Increase over W. Transparent in tons per acre for two crops.	Increase per cent over W. Transparent.
B. H. 10 (12) ...	37.12	27.76	64.91	22.10	51.62
Ba. 6032 ...	39.75	23.88	63.63	20.82	48.63
W. No. 2 ...	33.05	25.19	58.24	15.43	36.04
B. 6450 ...	30.95	22.22	53.17	10.36	24.20
W. Transparent ...	26.18	16.63	42.81	...	...

As will be seen from the above table the B. H. 10 (12) Ba. 6032, W. No. 2 and B. 6450 gave increased yields over the White Transparent for the two crops of 22.10, 20.82, 15.43 and 10.36 tons of canes per acre respectively; i.e. 51.62, 48.63, 36.04 and 24.20 per cent. respectively. Assuming that, as about nine tons of these sugar-canes would be sufficient to produce a ton of sugar, in the case of the B. H. 10 (12) it would be less, the increase over the White Transparent would be equivalent to 2.46, 2.31, 1.71, and 1.15 tons of sugar per acre respectively. At \$5.03, the average price at which dark crystals sold in 1919, the value of the increased yield from the B. H. 10 (12), Ba. 6032, W. No. 2 and B. 6450 over the White Transparent for the two years would be \$277.17, \$260.27 \$192.27 and \$120.57 per acre respectively. As it did not cost anything more to produce the canes, and as the extra molasses would be sufficient to pay the cost of manufacturing the extra sugar, the amount mentioned above would be clear gain to the estate.

EXPERIMENTS WITH CUTTINGS MADE FROM LARGE AND SMALL CANES.

During the season under review experiments were carried out to ascertain whether cuttings taken from large sugar-canes gave better results than those taken from small sugar-canes. The cuttings of both plots germinated very regularly, and for the first three months there was a marked difference in favour of the cuttings planted from the large sugar-canes. After the rains came in and the sugar-canes commenced to grow the difference could not be so well seen. In January 1919, it was observed that a considerable number of the sugar-canes in these plots had been attacked by root-borer and brown hard-back. As soon as it was possible, the canes, the tops of which were drying in each plot, were cut and weighed and then the canes, the tops of which were not so withered, were also cut and weighed. As soon as the canes were cut, the holes were dug out two feet square and, where practicable, a foot deep, and all the larvae, pupae and imagoes of the root-borer and the brown hard-back were reckoned and destroyed. The results are given in the following table:—

TABLE XII.

DODDS—SUMMERVALE FIELD, PLANT CANES, 1917-1919.

	Canes tons per acre.	Per cent. by No. of rotten canes.	Diaprepes abbreviatus per acre.	Phytalus smithi per acre.	Total Da. and P.s. per acre.
Large cane cuttings. B.H. 10 (12).					
Series 1	28.25	3.08	2,017	504	2,521
Series 2	26.74	4.88	7,744	1,452	9,196
Mean	27.50	...	...	...	5,859
Large cane cuttings. B.H. 10 (12).					
Series 1 ... Withered tops	27.25	11.17	6,361	2,404	8,765
Series 2	24.68	10.97	7,484	1,800	8,784
Mean	25.97	...	...	...	8,775
Small cane cuttings. B.H. 10 (12).					
Series 1	29.77	1.75	4,812	1,291	6,106
Series 2	25.58	2.66	8,788	1,847	10,635
Mean	27.68	...	...	...	8,371
Small cane cuttings. B.H. 10 (12).					
Series 1 ... Withered tops	26.76	12.36	8,258	4,285	12,488
Series 2	21.83	8.31	6,897	1,694	8,591
Mean	24.30	...	...	...	10,540

As will be seen therefrom in each case the canes with the withered tops gave a lower yield than the canes in the same plots the tops of which were not so withered. In taking the average of the results a small difference of .75 of a ton was shown in favour of plants grown from large canes. But as was seen from the number of the root borer and brown hard back feeding on the roots of these canes (*vide* Table) it is impossible to draw any conclusion from the results of the experiments. Attention may, however, be drawn to the greater number of rotten canes among the "withered canes."

EXPERIMENTS WITH CUTTINGS MADE FROM CANES ATTACKED AND CANES
NOT ATTACKED BY THE MOTH BORER.

Experiments were also carried out during the year under review with cuttings taken from sugar-canes attacked and from sugar-canes not attacked by the moth borer (*Diatraea saccharalis*, Fabr.). The experiments were carried out in a similar manner to those mentioned in the case of cuttings taken from large sugar-canes and small sugar-canes, so there is no need to repeat it in detail. The results are given in the following table:—

TABLE XIII.

DODDS, SUMMERVALE FIELD, PLANT CANES, 1917-1919.

	Cane, tons per acre.	Per cent. by Number of rotten canes.	Diaprepes ab- breviatus per acre.	Pythatus smi- thi per acre.	Total D. A. and P. S. per acre.
Healthy cane cuttings, B. H. 10(12)					
Series 1	28.60	6.41	7,205	2,805	10,010
Series 2	25.54	2.08	6,600	2,970	9,570
Mean	27.07	...	...	...	9,790
Healthy cane cuttings, B. H. 10(12),					
Series 1 Withered tops.	22.64	26.00	8,699	3,058	11,757
Series 2	26.74	12.51	8,038	2,362	10,400
Mean	21.69	...	...	...	11,079
Moth-borer cane cut- tings, B. H. 10 (12)					
Series 1	28.86	9.9	6,806	3,463	10,269
Series 2	23.95	3.05	6,211	3,469	9,680
Mean	26.16	...	...	...	9,945
Moth-borer cane cuttings, B. H. 10(12),					
Series 1 Withered tops.	26.04	21.50	9,770	2,673	11,443
Series 2	27.24	11.39	8,194	2,718	10,912
Mean	26.64	...	...	...	11,178

As will be seen therefrom the average weight of the canes grown from the cuttings taken from canes attacked by the moth borer was 52 cwt a ton more than the canes that were not attacked. As will be also seen there were so many larvae, &c., of the root borer and brown hard-back present that it is impossible to draw any conclusion from the results of the experiments. Attention may, however, be drawn to the greater number of rotten canes among the "withered canes."

SUMMARY OF THE RESULTS OF CERTAIN VARIETIES OF THE SUGAR-CANE AS COMPARED WITH THE WHITE TRANSPARENT.

As it is most important to the sugar cane growers as a whole that the results obtained with the better seedling varieties should be compared with the White Transparent, the standard cane, so as to obtain some idea of their comparative values, forms were sent to forty-three of the 305 estates in the island, asking for a return of the results obtained with the seedling and other sugar-canes grown for the crop of 1918. Replies this year were received from thirty-two estates. Of these, for various reasons, three were of no value, so that the comparative results could only be compiled from twenty-nine estates. Of these sixteen were from the black and thirteen were from the red soil districts. The number of forms sent out this year was considerably less than in previous years, which at one time was over 300. This was due to the fact that so few replies were received in the past in comparison with the number of forms sent out, that this year forms were sent only to those planters who in the past had returned them filled in, together with others who it was thought might possibly this year supply the information asked for.

Before comparing the results it might be as well if attention is called to the fact that the root borer and the brown hard-back are found on a number of estates supplying the information. It is, therefore, probable that the yields per acre of some of the different varieties of sugar-canes have been affected, and so they must be accepted with a certain amount of reserve. As has been already pointed out, the injury caused by these two pests on the manurial plots at Dodds was considerable, and the loss was not less than 486 tons of canes per acre.

PLANT CANES.

As will be seen from Table XIV giving the results in the black soil districts, the average yields of the plant canes were as follows, viz:—Ba. 6032 from 366 acres, 34.13 tons of canes per acre; B. 6308 from 3.75 acres, 33.96 tons of canes per acre; B.H. 10(12) from 436.5 acres, 33.95 tons of canes per acre; B. 6450 from 278.69 acres, 28.23 tons of canes per acre; and the White Transparent from 17.75 acres, 27.27 tons of canes per acre; differences in favour of the Ba. 6032, B. 6308, B.H. 10(12) and B. 6450 as compared with the White Transparent of 6.86, 6.69, 6.68 and .96 tons of canes per acre respectively.

In the red soil districts it has been customary in previous years to compare the different seedling canes with the White Transparent as the standard cane. Owing, however, to some of the different varieties giving better yields than the White Transparent most of the planters have now discontinued growing this sugar-cane. I have, therefore, this year, to compare the results of the different varieties of sugar-cane grown in these districts with B. 6450, which is now being used as a standard cane in place of the White Transparent. The average yields of the plant canes were as follows, viz:—B.H. 10(12) from 127.5 acres, 37.82 tons of canes per acre; Ba. 6032 from 77.5 acres, 36.38 tons of canes per acre; and B. 6450 from 262.5 acres, 31.8 tons of canes per acre; differences in favour of the B.H. 10(12) and Ba. 6032 as compared with the B. 6450 of 6.52 and 5.08 tons of canes per acre respectively.

FIRST RATOONS.

As no results with White Transparent as first ratoons in the black soil districts were received, the comparison has had to be made with the B. 6450. The average yields of the first ratoons were as follows, viz: B. H. 10(12) from 18.25 acres, 27.49 tons of canes per acre; B. 376 from 55.25 acres, 18.75 tons of canes per acre; B. 6450 from 226.5 acres, 18.57 tons of canes per acre; differences in favour of the B. H. 10(12) and B. 376 when compared with the B. 6450 of 3.92 and .18 tons of canes per acre respectively.

On the red soils the average yields were as follows, viz:—B. H. 10(12) from one acre, 27.74 tons of canes; Ba. 6032 from 29 acres 25.95 tons of canes per acre; Rappoe from 8 acres, 25.44 tons of canes per acre; B. 6308 from 16.5 acres, 23.43 tons of canes per acre; B. 6450 from 288.88 acres, 22.82 tons of canes per acre; differences in favour of the B.H. 10(12), Ba. 6032, Rappoe and B. 6308 when compared with the B. 6450 of 4.92, 3.13, 2.62 and .66 tons of canes per acre respectively.

SECOND RATOONS.

On the red soils the average yields of the second ratoons were as follows, viz:—Ba. 6032 from 5 acres, 26.49 tons of canes per acre; Rappoe from 9 acres, 20.64 tons of canes per acre; B. 6450 from 66.55 acres, 19.95 tons of canes per acre; differences in favour of the Ba. 6032 and Rappoe when compared with B. 6450 of 6.54 and .69 tons of canes per acre respectively.

VALUE TO THE ISLAND OF THE SUGAR-CANE EXPERIMENTS.

In the reports for the six previous years estimates were made as to the value to the island of the B. 6450, which has for the past several years given satisfactory results as compared with the White Transparent, the standard cane. As results with the White Transparent as plant canes were only received from two estates in the black soils, it would not be fair to compare it with the B. 6450, the results of which sugar-cane were received from seventeen estates. It would, therefore, be better to compare the B. 6450 which will now have to be considered the standard cane, with the seedling cane B.H. 10(12) and others of the better seedling varieties which are now being grown all over the island. Owing to the increase in the price of sugar due to the war, on a great deal of the land on which cotton was cultivated, canes are now grown, therefore the area of canes reaped during 1919 would probably be about 35,000 acres. On comparing the yields of the plant canes and ratoons in the black and red soil districts, as given in Tables XIV and XV, it will be seen that the yields on the average of the B.H. 10(12) over the B. 6450 amounted to 6.52 tons of canes per acre. As, on the average, factories in Barbados do not take more than nine tons of canes to make a ton of dark crystal sugar, and as several have taken less, it may be assumed that the increased yield of the B.H. 10(12) over the B. 6450 is equal to about two-thirds of a ton of dark crystal sugar per acre. This would, if the 35,000 acres were all planted in B.H. 10(12), be an increase to the crop of the island of about 23,333 tons of dark crystal sugar. In previous years it has been customary to calculate the increased yield at the average price at which dark crystal sugar sold for the previous twenty years and at that price, viz: £12 12s. 3½d. per ton, the monetary value of the increased yield would not be less than £294,822. If, however, the increase was calculated at the price obtained for dark crystal sugar this year, viz.: £23 9s. 5½d. per ton, the monetary value

of the increased yield would not be less than £547,693. In addition there is a gain made by the factories on the sugar-canes worked up, which would, if all the canes were manufactured into sugar at a properly equipped factory, be as follows :—35,000 acres at 6.52 tons of sugar-cane per acre is 228,200 tons. At the rate of nine tons of canes per ton of sugar this would represent 25,355 tons of dark crystal sugar. At the price paid for sugar-canes grown on the lands of the Government Industrial Schools, viz. \$8.94 per ton, and assuming that the cost of manufacture is £4 per ton, the gain to the factory would be £68,722, making a total of £616,415 to the sugar-cane growers and factory owners from the work of the Department of Agriculture.

TABLE XIV.

SUMMARY OF RESULTS OF LARGE VARIETY EXPERIMENTS FOR SEASON 1917-1919.

Name or No. of cane.	No. of estates.	No. of acres.	Total No. tons canes.	Average tons canes per acre.	Increase or decrease compared with W.Transparent
<i>Black Soils—Plant canes.</i>					
Ba. 6032 ...	15	366.00	12493.40	34.13	+ 6.86
B. 6308 ...	1	3.75	127.36	33.96	+ 6.69
B.H. 10 (12) ...	15	436.50	14821.12	33.05	+ 6.68
B. 6450 ...	17	878.69	24801.71	28.23	+ .96
W. Transparent ...	2	17.75	484.00	27.27	...
B. 376 ...	8	85.50	2152.36	25.17	- 2.10
<i>Black Soils—First Ratoons compared with B. 6450</i>					
B.H. 10 (12) ...	4	18.25	501.73	27.49	+ 8.92
B. 376 ...	6	55.25	1035.99	18.75	+ .18
B. 6450 ...	10	226.50	4205.71	18.57	...
Ba. 6032 ...	6	35.50	645.92	18.19	- .38

TABLE XV.

SUMMARY OF RESULTS OF LARGE VARIETY EXPERIMENTS FOR SEASON 1917-1919

Name or No. of cane.	No. of estates.	No. of acres.	Total No. tons canes.	Average tons canes per acre.	Increase or decrease compared with W.Transparent
<i>Red Soils—Plant canes</i>					
B. H. 10 (12) ...	10	127.50	4822.42	37.82	+ 6.52
Ba. 6032 ...	7	77.50	2819.84	36.38	+ 5.08
B. 6450 ...	12	262.50	8216.15	31.39	...
B. 6308 ...	2	12.00	371.57	30.96	- .34
B. 376 ...	10	216.75	6036.90	27.85	- 3.45
<i>Red Soils—First Ratoons</i>					
B. H. 10 (12) ...	1	1.00	27.74	27.74	+ 4.92
Ba. 6032 ...	6	29.00	752.43	25.95	+ 3.13
Rappoe ...	1	8.00	203.50	25.44	+ 2.62
B. 6308 ...	4	16.50	387.39	23.48	+ .66
B. 6450 ...	12	288.88	6593.45	22.82	...
B. 376 ...	11	287.88	5922.28	20.57	- 2.25
Cal. Queen ...	1	1.00	18.00	18.00	- 4.82
<i>Red Soils—Second Ratoons</i>					
Ba. 6032 ...	3	5.00	132.47	26.49	+ 6.54
Rappoe ...	1	9.00	185.80	20.64	+ .69
B. 6450 ...	7	66.55	1327.79	19.05	...
B. 376 ...	10	209.55	4093.29	19.53	- .42

THE COTTON INDUSTRY.

The experiments for improving the quality and increasing the quantity of lint obtained from the Sea Island cotton grown in Barbados were continued this year. These experiments were carried out in two series. In the first series an effort is being made by a selection of the best formed plants giving heavy yields of good quality lint to improve the Sea Island, certain indigenous and other varieties of cotton. In the second series an effort is being made in the same manner to improve a number of hybrid cottons that have been obtained by crossing some of the improved varieties with some of the indigenous cottons. The method by which these plants are selected has been so often given in previous reports that it is unnecessary to include it here. The method by which the lint is examined has also been referred to in previous reports so that it is unnecessary to reproduce it. The experiments in the first series numbered twenty-five, and were carried out on lands rented from Waterford Plantation, and at Dodds and Summervale; and are given in Tables XVI to XVIII. To give some idea of the value of each variety as a crop producer, the quantity is calculated to the acre. Any variety that fails to give satisfactory results is discarded; and during the past season sixteen varieties have been discarded. It was mentioned in the two last Annual Reports of the Department that seed of the best strain of Sea Island cotton had been distributed to different persons for planting purposes. That the cotton grown from this seed is of good quality it may be mentioned that during the last cotton season the Barbados Co-operative Cotton Factory, Ltd., shipped 208 bales of cotton, among which was a bale of this special cotton which sold for 44d. per lb., which was more than any of the cotton shipped by the Cotton Factory sold for during that season.

As it is very desirable, owing to the serious attacks on the sugar-canes by the root borer, *Diaprepes abbreviatus*, Linn., and the brown hard-back, *Phytalus smithi*, Arrow, that rotation crops should be grown in the fields attacked by these pests, and as cotton is an admirable crop for the purpose, the Governor has been pleased to allow twenty acres of cotton selected from the same strain that has been even further improved, to be planted (ten acres at the Government Industrial Schools and ten acres at the Lunatic Asylum) so that a considerable quantity of seed of a good strain should be available for planting purposes during 1920. It may also be mentioned that during the year 2,532 lb. of seed of this strain of selected cotton was sold to various cotton growers and that both the seed cotton and lint which gained all the prizes awarded at the Agricultural and Industrial Exhibition held by the Barbados General Agricultural Society in December 1918, was grown from this seed.

With regard to the five-lock cotton which was presented to the Department of Agriculture by the late Mr. J. L. Fonda, it has been found that the yield is very poor. This year practically no lint was obtained from it so it has been discarded.

COTTON HYBRIDS.

During the year under review the cultivation of the hybrids H. 0944 and H. 131 was continued. I regret, however, to report that the results were very unsatisfactory. In the case of H. 131 the results were so bad that its cultivation has been discontinued. With regard to H. 0944, although the results were not very good it has been decided to continue its cultivation a little longer.

INDIGENOUS COTTON.

As has been pointed out in previous reports that owing to the deterioration that has taken place in the varieties of exotic cottons introduced during the recent years, it was decided to improve some of the best of the cottons that had survived from bygone years when cotton was grown on a commercial scale. At the present time there are three of these indigenous cottons under cultivation. The results are given in Table XVII.

NATIVE COTTON.

The native cotton mentioned in the last two annual reports has so far continued to keep practically free from insect pests and fungoid diseases and has continued to improve under the system of cultivation and selection carried out. The results are given in Table XVIII. Since this work has been started I find from Vol. XIII., Part III. of the Agricultural Journal of India that similar work is being carried out with native cotton in India. It is there stated that "Of late years, owing to the efforts of the Indian agricultural officers, Indian cottons have improved in quality, and there is every reason to hope for further pro-

"gress in this direction. Attempts have been made from the earliest days to introduce foreign varieties of cotton but with little success, and effort is now directed chiefly to the improvement of the indigenous cottons. The procedure is to isolate and maintain pure types, to improve quality by selection, and to introduce the improved plant into general cultivation. By this means, varieties with higher yields and larger lint percentage have been obtained in Bombay and Madras, in the Central Provinces and in the United Provinces."

ARBOR DAY.

For some years now it has been customary to observe the bank holiday in August as Arbor Day, that is a day on which plants distributed free of cost to those desirous of having them should be planted. This year Arbor Day was observed on August 5, and 1,073 plants were distributed. A list of the plants available was as usual published in the Official Gazette and the editors of some of the local newspapers were good enough to call attention to the fact that persons desirous of obtaining plants for the observation of Arbor Day could do so by applying to the Superintendent of Agriculture. The following is a list of the plants that were offered for distribution, viz:—

Achras Sapot, Linn.
Adenanthera pavonina, Linn.
Albizzia Lebbek, Benth.
Audira inermis, H. B. & K.
Anona muricata, Linn.
Anona squamosa, Linn.
Bauhinia tomentosa, Linn.
Blighia sapida, Kon
Bombax malabaricum, D.C.
Caesalpinia coriaria, Willd.
Cassia becillaris, Linn.
Cassia grandis, Linn.
Cassia javanica, Linn.
Cassia multijuga, Rich.
Cassia sp. (yellow)
Cassia sp.
Casuarina equisetifolia, Linn.
Cedrela Toona, Roxb.
Chrysophyllum Cainito, Linn.
Coccoloba grandifolia, Jacq.
Coffea liberica, Hiern.
Coffea robusta, Linden.
Combretum sp.
Dillenia sp.
Erythrina indica, Lam.
Gliricidia maculata, H. B. & K.

Guaiazum sanctum, Linn.
Haematoxylon campechianum, Linn.
Hernandia sonora, Linn.
Jacaranda ovalifolia, R. Br.
Lagerstroemia indica, Linn.
Lonchocarpus violaceus, H. B. & K.
Lysiloma Sabicu, Benth.
Mimusops Elengi, Linn.
Morus Alba, Linn.
Parmentiera cereifera, Seem.
Paullinia barbadensis, Jacq.
Peltogyne paniculata, Benth.
Peltophorum Linnaei, Benth.
Peltophorum Vogelianum, Walp.
Piscidia Erythrina, Linn.
Pithecolobium Samar, Benth.
Pithecolobium latifolium, Benth.
Poinciana regia, Boj.
Pterocarpus indicus, Willd.
Putranjiva Roxburghii, Wall.
Sesbania grandiflora, Poir.
Pathelia simplex, Linn.
Swietenia macrophylla, King in Hook.
Swietenia Mahagani, Jacq.
Terminalia Arjuna, Wight & Arn.

HERBARIUM.

Owing to there being no Assistant Superintendent to assist with the scientific work of the Department during the year, practically no specimens of plants were added to the Herbarium.

THE GROWTH OF VEGETABLE FOODSTUFFS TO SUPPLEMENT THE DEFICIENCY CAUSED BY THE INABILITY OF THE MERCHANTS TO IMPORT FOODSTUFFS OWING TO THE WAR.

Owing to a threatened scarcity of food the Legislature, in May 1917, passed an Act to make provision for increasing the production of vegetable foodstuffs in the island entitled "The Vegetable Produce Act 1917 (1917-20)." Under this Act provision was made by the Governor-in-Executive Committee to appoint seven Commissioners, and the Department of Agriculture was required to render such aid to the Commissioners as they might require and as might be practicable. In accordance therewith, the Superintendent of Agriculture was appointed the Chief Inspector.

For the first few weeks after the passing of the Act, owing to the desirability of ascertaining as soon as possible the quantities of the different vegetables planted in the island, two of the officers of the Department of Agriculture, viz., Messrs. M. S. Goodman and E. H. Barrow, the First and Second Field Assistants respectively, together with Mr W. E. G. Ward were appointed Inspectors. After a survey of the Island had been made, Messrs M. S. Goodman and E. H. Barrow

resumed their duties and for a short time Mr. W. E. G. Ward carried out the duties required by the Act by himself. Subsequently, Mr. Ward was on the resignation of the Assistant Superintendent of Agriculture, appointed to act as Second Field Assistant and, as it was found that the work was too much for one man to perform efficiently, Messrs. J. B. and J. A. Marshall were appointed Inspectors, and they continued in office until the House of Assembly declined to renew the Act after the end of the financial year, March 31, 1919.

LOCAL AGRICULTURAL SHOW.

The Local Agricultural Show for peasant proprietors, children of the elementary schools, and others, was held this year with the kind permission of the Hon. G. L. Pile, M.L.C., the lessee, at Drax Hall Plantation, St. George, on Wednesday, December 4th. Three hundred and twenty-five prizes were offered for exhibits of young oxen, milch cows, small stock, vegetables, fruit, Sea Island cotton, budded and grafted citrus and mango plants, etc. In the classes provided for the children of the elementary schools ninety-six prizes were offered for plants grown by them in half barrels, tubs, pots and boxes and in school gardens. As usual seeds of the various vegetables cultivated in Barbados were imported and were, with the kind assistance of the Committee of Management and others distributed free of cost to the peasants, small proprietors and to teachers for the children of the elementary schools. The Education Board was good enough to contribute a sum of £3. 7s. 4d. towards the purchase of this seed. Three hundred and fourteen exhibits were sent in from the elementary schools competing. Of these ninety-four were awarded prizes from the following twelve schools, viz., Holy Innocents twenty-one, Mount Hilloby eighteen, St. Joseph Church Boys' seventeen, Southborough thirteen, St. George Church Boys' five, Mount Tabor five, St. Saviours four, St. Patricks four, Ebenezer two, St. Matthias two, St. Bernards two, St. Philip Church Boys' one. As Barbados is mainly an agricultural colony it is felt that every effort should be made to encourage every one to take an interest in agriculture, but especially the children of the elementary schools, most of whom will in after life be agriculturists. Again this year, therefore in addition to offering prizes to the children of the elementary schools for articles grown by them in half barrels, tubs, pots, and boxes and for articles grown by them in school gardens, the Committee of Management offered thirty-two prizes in Class VIII for various agricultural operations, such as making sweet potato and yam banks, digging cane holes, forking and draining land, etc. Four prizes amounting in the aggregate to \$4.25, were offered for collections of pinned insects which attack the economic crops grown in Barbados. As the funds at the disposal of the Committee are limited, Mr. F. A. C. Collymore has offered, in the event of its being necessary, to supply any money needed for the prizes offered in this Class. Prizes were also offered to the Head Teachers of the schools that gained the greatest number of prizes for collections of plants growing in half barrels, tubs, pots and boxes, for collections of articles grown in school gardens, for agricultural work, and for the first time this year prizes were also offered to Head Teachers for the best collections of pinned insects attacking economic crops. The winners of the prizes offered for the best collections of plants growing in half barrels, tubs, pots and boxes were: first prize, Mr. E. G. Smithwick, Mount Hilloby; second prize, Mr. J. T. Smith, St. Patricks; third prize, Mr. L. T. Gay, St. Saviours; fourth prize, Mr. P. W. Jones, Holy Innocents. The winners of the prizes offered for the best collections of articles grown in school gardens were: first prize, Mr. P. W. Jones, Holy Innocents; second prize, Mr. O. Walcott, St. Joseph Church; third prize, Mr. J. R. Bailey, Southborough; fourth prize, Mr. H. G. Smithwick, Mount Hilloby. The winners of the prizes offered for agricultural work performed by the children of any elementary school were: first prize, Mr. J. L. Brathwaite, Ebenezer; second prize, Mr. F. A. Williams, St. George Church; third prize, Mr. O. Walcott, St. Joseph Church; fourth prize, Mr. J. R. Bailey, Southborough. The winners of the prizes offered for the best collections of the pinned insects were: first prize, Mr. O. Walcott, St. Joseph Church; second prize, Mr. O. Walcott, St. Joseph Church; third prize, Mr. O. Walcott, St. Joseph Church; fourth prize, Mr. A. O. D. Crichlow, Mount Tabor. Diplomas of Merit of the Barbados Department of Agriculture were offered to the large cultivators for the best stools of sugar canes, samples of Sea Island cotton, collections of yams, sweet potatoes, eddoes, Indian corn, Guinea corn, and the best bunches of bananas and plantains. Diplomas of Merit were also offered to the Head Teachers of the Elementary schools for the best collections of exhibits grown in school gardens and for the best collections of plants growing

in half barrels, tubs, pots and boxes, as well as to the small proprietors for exhibits of special merit.

The Diplomas were awarded as follows:—

LARGE PROPRIETORS.			
Plant Sugar-canes	...	...	Mount Plantation.
Native bred Donkey	...	...	Mr. E. L. Skeete.
HEAD TEACHERS OF THE ELEMENTARY SCHOOLS.			
School Garden Exhibits	...	...	Mr. E. G. Smithwick, Mount Hilloby Combined School.
" " "	...	...	Mr. P. W. Jones, Holy Innocents Boys' School.
" " "	...	...	Mr. O. Walcott, St. Joseph Boys' School.
Agricultural work	...	...	Mr. J. L. Brathwaite, Ebenezer Boys' School.
" " "	...	...	Mr. F. A. Williams, St. George Boys' School.

SMALL PROPRIETORS.			
Ox	...	...	Mr. Jno. Vickers.
Native bred pony	...	...	Mr. Robert Davis.
Tomatoes	...	...	Mr. D. C. L. Barrow.
Cabbages	...	...	Mr. D. C. L. Barrow.

Drax Hall being situate in a district of the island where, as a rule there is a good rainfall, and as last year the weather conditions were on the whole favourable for the cultivation of such plants as beets, cabbages, turnips, onions, etc., there was a fair number of exhibits of these articles but still not as many as was expected from the quantity of seed distributed. The exhibits sent in from the elementary schools were on the whole well grown, but were not quite as many as the previous year, being 314 as compared with 409 the year before and 292 in 1916.

In the afternoon, the Governor, His Excellency Lieut.-Colonel C. R. M. O'Brien, C.M.G., accompanied by Capt. W. Richardson, A.D.C., visited the Show, and after inspecting the exhibits, was good enough to distribute the prizes. The Superintendent of Agriculture then on behalf of all those present, thanked His Excellency for being so good as to attend the exhibition and for distributing the prizes. He called attention to certain exhibits of fruit which had been badly staged, contrasting them with some excellent specimens of carrot and kohlrabi. With reference to the elementary schools he stated that he did not think the children were quite fairly treated in the matter of agricultural education, and prayed His Excellency to assist the Education Board at any time he could, to carry out a system of agricultural teaching in the elementary schools. In the schools, other than elementary, boys were to a great extent trained for their future avocations in life; those who wanted to follow the medical profession were so trained that when they left school they were able to go to a University and continue their studies in medicine and surgery, while those who preferred to study the law went to the proper institution and qualified themselves for the profession. But in the elementary schools the boy, whose calling in life would be agriculture, was not given the necessary training in school to equip him for his work as a practical agriculturist. He, therefore, asked His Excellency if ever the opportunity arose to assist the Education Board by giving a small grant for the purpose of teaching the boys in these schools agriculture. At the request of Mr. Bovell three hearty cheers were then given His Excellency.

The Governor in acknowledging the vote of thanks which had been accorded him so heartily, assured those present that it had given him great pleasure to visit the Show and to present the prizes. He regretted that owing to indisposition, Mrs. O'Brien was unable to be present. He was glad to see that many of the exhibits were very good. He was able to say this as he had seen similar exhibits in other tropical and sub-tropical countries. On behalf of his two daughters he promised to present prizes at the next exhibition to the girls of the elementary schools. His Excellency also said he was entirely in sympathy with Mr. Bovell with regard to the necessity of training the children to be good agriculturists and that his ardent support could be counted on in any measure that would appertain to the spread of learning or to the training of the people in the island to be good agriculturists.

The Rev. J. R. Nichols, Inspector of Schools, said a few words of encouragement to those teachers who had been working so hard to inculcate the principles of industry among the school children, and to improve the agricultural prospects in their districts about the island. In this connection he mentioned the names of Mr. P. W. Jones of Holy Innocents Boys' School, Mr. E. G. Smithwick of Mount Hilloby Combined, Mr. O. Walcott of St. Joseph Church Boys' and Mr. J. R. Bailey of Southborough Boys'. He also called attention to the fact as showing the sympathy of the Education Board in this matter that they had doubled the amount usually given for school prizes at the Local Show. Without wishing to bring it too prominently forward he said that he could not help referring to the increase of praedial larceny but the fact was that it is now affecting his Department, as at least two of the school gardens had been looted and many of the good plants taken away, and he hoped that something would soon be done to put a check to it. He also drew attention to the increase in the number of boys who took part in the competition for agricultural work, the first year there were thirty, last year sixty-six and this year there were eighty.

The Hon. G. L. Pile, M. L. C., said that these exhibitions were doing a great deal of good, particularly since the question of doing practical agricultural work and offering prizes for such work, had taken definite shape; that the earth produces everything that supports man and beast and without the produce of the earth none would be able to live, and he promised to help with the exhibitions in any way that he could at any time. In conclusion he congratulated Mr. Nichols on the work he was doing in the cause of agriculture and congratulated the schoolmasters and the boys on the excellence of their work.

INSPECTION AND FUMIGATION OF SEEDS, PLANTS, &c.

From April 1, 1918 to March 31 1919, 252 packages of plants, seeds and bulbs, other than cotton seed for the manufacture of oil and meal were examined. Of these forty-eight were either fumigated or disinfected, and fourteen packages which had been imported in contravention of the orders promulgated by the Governor-in-Executive Committee, were destroyed. During the period under review fifty-four consignments of cotton seed amounting to 47,304 bags were fumigated by the Hygeia. In addition there were twenty-eight bags which were imported for planting purposes, fumigated at the Department of Agriculture. In addition to the above, two bags of cotton seed were burnt, and one package of orchids and lily bulbs was returned to Trinidad.

On November 4, 1918 the schooner "Annie M. Murphy" arrived from Para with, inter alia, 1,000 bags of cotton seed on board. As the pink boll worm, *Gelechia gossypiella*, Saunders, is known to be doing a great deal of injury to the cotton industry in Brazil, the hold of the ship was examined and specimens of the moth were found. On this being brought to the notice of the Governor, His Excellency refused to allow the cotton seed and other cargo to be landed and bags of cassava meal and dried slices of cassava which had been landed were returned to the ship. Later on the whole cargo of the schooner was transhipped to the S. S. Sargasso for carriage to the United Kingdom. It may be mentioned that frequent search was made for the pink boll worm moth while the cassava was stored in the warehouse in town, but on no occasion was any specimen found. A search was also made in the neighbourhood of the warehouse for all plants of the order Malvaceae and where found, they were, with the permission of the owners, destroyed. It is therefore hoped that the pink boll worm has not been introduced into the island.

INSECT PESTS AND FUNGOID DISEASES, ETC.

During the year under review an Order and two Acts were passed dealing with the protection of the crops of the island, viz:—

- (1) An Order prohibiting the importation into this island of cotton seed produced in Brazil or that has at any time been landed in Brazil.
- (2) An Act to amend the Trade Act, 1910 (1910-6) giving the Governor-in-Executive Committee power under certain circumstances to prohibit the importation of seed from any country in which any disease of the cotton plant or other crops exists that may be introduced into this island.
- (3) An Act to provide for the destruction of old cotton trees and for the establishment of a close season, entitled the "Cotton Diseases Prevention Act, 1919."

Under the "Cotton Diseases Prevention Act," which provides that all cotton plants should be destroyed by the 30th day of April in each year, and that no cotton shall be planted between the first and thirty-first days of May inclu-

sive in each year the Superintendent of Agriculture is constituted Chief Inspector of Cotton and any member of the Department of Agriculture employed in connection with the administration of the Act, an Inspector of Cotton. The principal duties of the officers of the Department of Agriculture under this Act are to see that the Inspectors of Cotton for the different parishes, appointed under the Sale of Cotton Act 1906-4 carry out the provisions of the Act. As soon as the Act was passed as it affected a number of the peasants and small proprietors who seldom or never see an Official Gazette or any newspaper a number of placards were sent to the rectors, cotton inspectors and to a number of the vicars residing in the districts of the island where cotton is usually grown, with the request that they be so good as to post them up. So far as I can gather in every instance but one, the persons to whom the placards were sent very readily and kindly assisted by calling the attention of the poorer members of their districts to the penalty they would be subject to if they failed to comply with the provisions of the Act, not only by posting the placards in conspicuous places, but in some instances by calling attention to them from their pulpits as well.

In spite of the fact that during the year under review there was no Assistant Superintendent of Agriculture who had been trained in entomology and mycology to assist with these branches of the work, considerable attention was still paid to the various insect pests and fungoid diseases attacking the crops of the island. This has been especially so in the case of the root borer, *Diaprepes abbreviatus*, Linn, and the brown hard-back, *Phytalus smithi*, Arrow. It is with great regret that I have to report that the injury caused by these pests is on the increase and that the two beetles are gradually spreading from the low lying districts to the central part of the island and their attacks are no doubt increasing in severity as time goes on. In some instances the loss occasioned by these pests has reached during the year under review as much as 50 per cent. It is also with great regret that I have to report that the results of the manurial experiments carried out in connection with the sugar canes, and the majority of the experiments carried out with the seedling sugar canes have to a great extent been rendered valueless by the attacks of these pests.

As will be seen from the last annual report of the Department, owing to the seriousness of the attacks of the root borer and brown hard-back the Agricultural Society asked the Superintendent of Agriculture to prepare a pamphlet containing a resume of the life history of these pests with recommendations for controlling them for which was distributed to all the planters in the island. At the beginning of 1919, owing to the partial drying up of a considerable area of the sugar canes in the island, it was seen that these pests were doing a great deal of injury, and as His Excellency the Governor desired to know whether the recommendations contained in the pamphlet had been carried out, he directed the Superintendent of Agriculture to send a form to each estate to which the pamphlet had been sent asking whether the root borer and brown hard-back were present, and if so whether any action had been taken to control them. He also desired, in case the pests did not occur that a statement to that effect should be made on the form when it was being returned. In accordance with His Excellency's instructions 312 forms were sent out; of these 226 were returned. With regard to those returned, in a number of instances they were so incomplete that it was impossible to draw any conclusions from them. In several instances the forms were returned with the statement that no root borer or brown hard-back existed on the estates reported upon, when it was known that on some of the estates either one or the other or both of these pests were present. Eighty-six of the planters to whom the pamphlet was sent took no notice of the request for information as to what had been done on their estates. On a report being made to His Excellency he appointed a Commission "To enquire into the Root Borer Disease of the Sugar-cane, and to report on what measures should be adopted with a view to controlling or eradicating the same." To give some idea of the seriousness of the attack on the manurial experiment plots at Dodds this year it may be mentioned that the average number of larvae collected after the cane holes were dug two feet square and where possible one foot deep was 4,646 root borers and 1,260 brown hard-backs, making a total of 5,906 larvae, pupae and, in a few instances, imagoes per acre. It may also be mentioned that during the digging out of the larvae, pupae and imagoes of the root borer and the brown hard-back a note was made of the number of cocoons of the *Tiphia parallela* seen and that they averaged sixty-six per acre. In the case of the seedling sugar-cane variety experiment plots, there were a considerable number of the pests present again this year (1919) mainly in the larval stage; there were, comparatively

speaking, very few of either the pupae or imagoes. In Well field the average number collected from all the plots was 7,446 root borers and 6,345 brown hard-backs, making a total of the two pests per acre of 13,791; in Upper Padmore field 5,125 brown hard-back and 4,198 root borers, making a total of 9,323 per acre; in Mill field 3,102 root borers and 3,806 brown hard-backs, making a total of 6,908 per acre; in Pilgrim field 2,512 root borers and 2,834 brown hard-backs, making a total of 5,346 per acre, and in Lower Chapel field 1,534 root borers and 2,333 brown hard-backs, making a total of 3,867 per acre. These ranged in the case of Well field for both pests from 5,226 to 32,285 per acre; in Upper Padmore from 4,936 to 17,018; in Mill field from 3,310 to 11,440; in Pilgrim field from 2,207 to 8,536 and in Lower Chapel from 1,161 to 9,582 per acre. During the time the root borer and brown hard-back grubs were being dug out a note was made of the number of *Tiphia* seen and they averaged 199 per acre—the number varying from none to 1089 per acre. It may be mentioned, in the case of Lower Chapel field, that when last in canes (in 1916) some of the plots were so badly attacked that nearly all the canes died and so we were unable to test some of the varieties, the field was then rotated and judging by the yield this year, the one year's rotation has apparently caused a considerable reduction in the number of the pests. It may also be mentioned that the canes in this field showed less signs of being attacked than any of the fields on which the seedling sugar-canes were grown. It may also be of interest if it is stated that this year in Upper Padmore field there were four plots of B.6450 dotted about the field to be used in comparison with the seedling varieties growing in the sections of the field in which this variety was grown, and that the fewer the larvae of the beetles found the better was the yield of the sugar-canes. The results were as follows, viz:—Series i. gave a yield at the rate of 31.60 tons of canes per acre, in this case only 5,401 larvae, &c. were collected; in Series ii. the yield was 29.29 tons per acre and the number of grubs collected 6,910; in Series iii. the yield was 26.70 tons per acre and the number of grubs collected 7,898; in Series iv. the yield was 26.65 tons per acre and the number of grubs collected 8,188. It may also be of interest if it is stated that in Series i. fifty-eight *Tiphia parallela* cocoons were seen; in Series ii, 116; in Series iii, 1,015 and in Series iv, 348.

During the reaping season of 1919, owing to the number of sugar-canes attacked by the moth borer, *Diatraea saccharalis*, Fabr., experiments were carried out on three estates for the purpose of ascertaining the loss sustained by the planters from the attacks of this pest. A detailed account of the results obtained has already been given, but it may be mentioned here that the average per cent. of canes attacked was 94.87, and the average loss sustained was \$94.80.

It is to be regretted exceedingly that so few planters realize the loss they sustain from the attacks of this pest. As is well known the eggs of the moth borer are heavily parasitised by *Trichogramma pretiosa*, and another egg parasite the name of which is not yet determined, and it should be a regular practice on the estates for the egg batches to be cut off and placed where the larvae of the moth borer can be killed and where the parasites can carry on their good work on the planter's behalf. A couple of years ago on one estate a considerable portion of one field was injured to a great extent by the attacks of the larvae of *Girphus microgonia*, Hmp. This pest, however, was so heavily parasitised by *Peleteria robusta*, Wied. that in a very short time it was brought under control and no more attacks have been reported from that estate.

In addition to the major insect pests of the sugar-cane mentioned above, there have been a few other pests which, however, so far as can be judged, have done little damage during the year under review. These minor pests are *Pseudococcus calceolariae* and *Pseudococcus sacchari*, and a Coccid, probably *Pulvinaria longulus*. In many instances *Pseudococcus calceolariae* was kept in check by the larvae of a Coccinellid beetle, *Hyperaspis trilineata*, Muls. and by a species of the fungus *Aspergillus*. In two fields on two estates there were at one time a number of ants of the genus *Rhizomyrma* apparently doing a certain amount of injury.

Cotton:—This year very few insects attacked this crop, with the exception of aphids, which were very much in evidence in some places. In one or two instances considerable damage was done by *Alabama argillacea* and *Aletia luridula*. These could easily have been prevented from injuring the cotton plants by timely dusting with Paris green. The red maggot *Porricondyla gossypii*, Coq. was seen in only one or two instances but its attacks were, so far as the writer is aware, negligible. With regard to the leaf blister mite, *Eriophyes gossypii*, there was the usual quantity to be seen. It may, however be of interest if it is mentioned, in connection with the experiments carried out

by the Department of Agriculture, that as cotton has been grown for several years past from seed obtained from plants on which there was practically no leaf blister mite, it would appear that a strain of cotton is being obtained that will be immune to the attacks of this pest. It may also be mentioned that as far as the writer can remember he has never seen a plant of the native cotton attacked by the leaf blister mite, except on one occasion, and that was a plant in a plot of native cotton that was being improved by selection. The plant was promptly destroyed and no others have since been attacked in this special native variety. It may also be of interest if it is stated that when a member of the Department of Agriculture was going about the island inspecting the cotton in connection with the Cotton Diseases Prevention Act, he was asked to observe specially whether any of the native cottons were attacked by the leaf blister mite, but he did not observe a single instance of any attack.

Provision Crops :—During the year under review, especially the latter part of it, the Scarabee (*Euscepes batatae*, Waterh.) was much in evidence in the drier districts of the island; and I regret to report that there appears to be very little attempt on the part of the planters to try and reduce the incident of attack by planting only healthy cuttings taken from vines grown from tubers free from the pest. There were also a number of complaints during the dry weather of the injury done by the red spider (*Tetranychus telarius*, Linn) and a species of thrips.

On several occasions slugs (probably *Veronicella occidentalis*) were received from planters in different districts of the island together with the statement that they were destroying young sweet potato plants. The enquirers were advised as to the remedial measures to employ.

Miscellaneous :—*Thrips tabaci* were found to be doing a great deal of injury to fields of eschalothe. The usual remedy of Nicotine-Sulphate (Black Leaf 40) and soap was used with success but as there was only a small quantity of Nicotine-Sulphate available the owner could make little headway in protecting his crop.

For some time it has been observed that a number of the mahogany trees about the island were attacked by some organism which caused a gnarled and contorted condition of the basal portion of the trunks. In 1917 an examination was made of specimens of the bark of one of the trees so attacked when it was found that a number of nematodes were present. Efforts were then made to try and exterminate them and to cause a tree to form healthy new bark, and judging by the appearance of a tree nearly twelve months after the last treatment it would appear that it has been satisfactory. The treatment so far, has been to remove from half of the trunk all unhealthy bark down to the cambium layer and then to paint over the exposed area with lime-sulphur mixture, thickened with clay to render it of the consistency of paint. After about two months when the first half was in an apparently healthy condition, the other half of the tree was similarly treated. Each half was painted over three times with lime-sulphur mixture.

It may be mentioned, that through the courtesy of Mr. H. Morrison, an entomologist of the Department of Agriculture of the United States of America, Dr. N. A. Cobb, the Specialist on nematodes in the United States Department of Agriculture, has very kindly offered to examine and report on the specimens found attacking the mahogany trees, and that specimens have been submitted to him. At the time this was written, no reply has been received from Dr. Cobb.

Fowl Ticks :—Specimens of this Acarina attacking fowls were sent in for examination and report.

Termites (wood ants) and ants :—Specimens were received during the year with the request from persons, whose premises or plants were infested by these insects, for advice as to the best means of eradicating or controlling these.

As usual a number of insects were forwarded to Dr. Guy A. K. Marshall, Director of the Imperial Bureau of Entomology, who, as in the past, was good enough to identify them for us. The following is the list of the insects sent :—

ORDER—HYMENOPTERA (Bees, wasps, etc.)

FAMILY—FORMICIDAE (ANTS)

Camponotus sp.

Found under bark of Mahogany tree at Codrington House.

Camponotus sp.

Taken at Codrington House.

ORDER—COLEOPTERA (Beetles)

FAMILY—SCARABAEIDAE (HARD-BACKS)

Phileurus valgus, L. (Sub-family Dynastidae).
Taken at light in Belleville.

FAMILY—DERMESTIDAE.

Attagenus gloriosae, F.
Taken at Office of Director of Agriculture.

FAMILY—ANOBIIDAE.

Sitodrepa panicea, L.
Attacking onion seed from Teneriffe.
Cosmopolitan pest of stored food-stuffs.

FAMILY ELATERIDAE—(CLICK BEETLES).

Heteroderes laurenti, Guer.
Ex Collection Mr. Dayton Stoner.

FAMILY—TENEBRIONIDAE.

Phaleria chevrolati, Fl. and S.
Caught on Dover Beach, Christ Church.

FAMILY—CURCULIONIDAE (WEEVILS.)

Zygops histrio, Boh.
Found among books at Colonial Secretary's Office.

ORDER DIPTERA—(FLIES)

FAMILY—TABANIDAE.

Tabanus hookeri, Towns., var.
Caught on an okra plant.

FAMILY—DROSOPHILIDAE.

Drosophila melanogaster, Mg.
The "Wine fly" of Europe. Bred from decaying mango.

FAMILY—TACHINIDAE.

Sarcophaga ventricosa, Wulp. (Male and female)
Found on Zea Mays, Linn. (Maize, Indian corn.)

ORDER HEMIPTERA.

SUB-ORDER—HOMOPTERA.

FAMILY—COCCIDAE.

Hemiberlesia longispina, Morg.
Attacking papaw tree (*Carica papaya* Linn). The male and its puparium had not been hitherto discovered. Specimens of a Chalcid parasite were also submitted to Dr. Marshall, but owing to the absence at the war of the Authority on this group of insects, it has not yet been identified.

DISEASES.

Sugar Cane :—*Marasmius sacchari* (Root Fungus) Owing to the favourable weather conditions which prevailed up to the end of November 1918, there were, comparatively speaking, few complaints from the planters as to the attacks of this fungus; where it did occur, it was probably due to the fungus adhering to cuttings used for planting purposes or to excessive ratooning.

Himantia stellifera (Stellate Crystal Root Fungus). This fungus was much in evidence this year in a field of second ratoons in the red soil district. The planter was advised to dig up those stumps attacked by the fungus, to lime the parts of the field in which they were growing and to plant a leguminous crop as a green dressing.

Colletotrichum falcatum, (Red Rot.) As usual the plot of Bourbon canes at Dodds was attacked by this fungus.

Thielaviopsis paradoxa (Pine apple Fungus.) A large percentage of the sugar-cane cuttings which failed to germinate were attacked by this fungus. It is greatly to be regretted that more attention is not paid to the question of

using only cuttings of vigorous healthy clumps properly treated with Bordeaux mixture before insertion in the fields. On one occasion the writer observed on an estate a receptacle with Bordeaux mixture in which cuttings were being dipped, that had not been emptied, he was informed, for the planting season; fresh Bordeaux mixture had been added as the quantity in the receptacle was reduced. As Bordeaux mixture ought not, it is said, to be used after the second day, the planter was probably doing more harm than good.

Cercospora vaginæ (A fungus of the leaf-sheath). This was very much in evidence this year and it is a matter of great regret that so many planters use cuttings for planting purposes which are attacked by this fungus.

Cephalosporium sacchari, Butl. No specimens of this fungus were seen during the year under review.

Miscellaneous:—*Grape Vine*.—Specimens of grape vine which were attacked by *Oidium Tuckeri* were sent in for examination. The usual treatment with flowers of sulphur was recommended.

SUGAR AND MOLASSES CROP.

According to the Customs Returns the exported sugar and molasses crops of 1918 were 22,011·05 tons of vacuum pan crystals, 11,197·35 tons of muscovado sugar and 10,683,609 wine gallons of molasses, equal at 110 gallons per puncheon, to 97,123·7 puncheons of molasses of all grades, of the total value of £1,562,849 made up as follows:—

White Crystal sugar	290 3	tons valued at	£ 7,257
Yellow " "	240·7	" "	4,814
Dark " "	21,480 05	" "	440,840
Muscovado " "	11,197·35	" "	235,042
	33,208 40		687,453
Fancy molasses	9,113,614	gals	" 759,463
Choice " "	1,283,268	" "	101,592
Vacuum Pan molasses	286,727	" "	14,336
	10,683 609	" "	875,396

Fancy molasses is concentrated cane juice from which most of the impurities have been removed, and owing to the impossibility in the ordinary muscovado sugar factories of concentrating each tray or panful of Fancy molasses to the same density, it is difficult to say how many gallons of this molasses are equivalent to a ton of muscovado sugar. From data obtained from various sources it would appear that 380 wine gallons of Fancy molasses at 41° Baumé are equivalent to one ton (2240 lb.) of centrifugalled muscovado sugar and 115 wine gallons of Choice molasses. At this rate the Fancy molasses manufactured in 1918 is equivalent to 23,983 tons of sugar. The total sugar crop therefore if no Fancy molasses had been made would have been 57,192 tons, i. e. 12,148 tons less than the previous year.

COTTON CROP.

For the "Cotton Year," i. e. from October 1, 1917 to September 30, 1918, there were exported from 1,337 acres 373 bales of lint, weighing 192,541 lb. of the estimated value of £28,948 16s. There were also 15½ bags of linters exported weighing 440 of the estimated value of £11. In addition there were 473,691 lb. of seed of the estimated value of £1,983 all of which was, with the exception of that used for planting purposes, manufactured locally into oil and undecorticated cotton seed meal. It may be mentioned that for the previous year there were 980 acres of cotton which yielded 142 bales of lint, weighing 74,920 lb., of the estimated value of £8,174. The yield of lint per acre for the season 1917-18 was 144 lb. as compared with 76 lb. for 1916-17. There is a big difference between the yields of the cotton in 1916-17 and 1917-18. This, however, is only apparent as, owing to the war, the ginning factories were unable to ship a number of bales of cotton lint in 1916-17.

METEOROLOGY.

The following are summaries of the observations recorded at the Government Meteorological Station for the year 1918, the details of which are given in Appendix I.

Barometric Pressure. During 1918 the mean pressure, corrected for temperature and gravity and reduced to sea-level, was at 9 a.m. 29·967 inches and at 3 p.m. 29·894 inches; the highest recorded being 29·985 inches on February 3, and

the lowest 29.739 on October 21. In 1911 for the first time the barometric pressure was corrected for gravity. For the ten years 1908-1917 the average barometric pressure was at 9 a.m., 29.938 inches and at 3 p.m., 29.874 inches. The highest pressure at 9 a.m. during the ten years was on February 5, 1917, when it was 30.098 inches, and the lowest at 3 p.m. on April 14, 1915 when it was 29.669 inches.

Temperature. The mean maximum temperature for the year 1918 was 84.5° F. and the mean minimum 72.0° F. The maximum extreme for the year, which was 88.1° F., was registered on May 17, September 7 and October 10, and the minimum extreme, which was 64.8° F., was registered on February 11. The mean average temperature was 78.3° F.; the highest monthly range for the year was 21.9° F., the lowest was 15.3° F., and the mean monthly range 18.4° F. For the ten years 1908-1917 the average maximum temperature was 84.3° F. and the average minimum 74.9° F. The average maximum extreme during the ten years was 87.1° F., the average minimum extreme 68.0° F., the average mean temperature was 79.6° F., and the average range 19.1° F. During the ten years the maximum extreme was 90.1° F., on September 28, 1912, and the minimum extreme 61.0° F. on February 20, 1911.

Tension of Vapour and Relative Humidity. The mean tension of vapour for the year 1918 was at 9 a.m. .707 and at 3 p.m. .693. For the ten years 1908-1917 the average tension of vapour was at 9 a.m. .718 and at 3 p.m. .707. The mean relative humidity for the year was at 9 a.m. 67 and at 3 p.m. 65. For the ten years 1908-1917 the average relative humidity was at 9 a.m. 68 and at 3 p.m. 65.

Wind. The mean velocity of the wind during 1918 was 11.9 miles per hour the maximum being 22.2 miles per hour on January 30, and the minimum 3.8 miles per hour on February 26. The average velocity for the ten years ended 1917 was 11.4 miles per hour.

On the morning of August 22, 1918, it was found at 8 o'clock that the barometer, which had been abnormally low at 5.30 o'clock a.m. when the readings were taken to be telephoned to the gun batteries, was only 29.826 inches when corrected for temperature and gravity and reduced to sea level. As the wind was then blowing from the N.N.E., and as the weather looked somewhat threatening, it was decided to take the readings of the meteorological instruments every half hour. The barometer continued to drop until 11 a.m., when it was 29.628 inches. At this time the wind, which had been blowing from the N.E. from 9 o'clock a.m.; veered suddenly to the E.S.E. and commenced to blow in gusts. From then on the barometer gradually rose until, by afternoon, it had risen to 29.876 inches. Owing to the gustiness of the gale a number of the peasants' wooden houses were damaged. The average velocity and direction of the wind were as follows:—

10.00 a.m. to 10.30 a.m.	29.6	miles	per	hour	N.E.
10.30 a.m. to 11.00 a.m.	24.8	"	"	"	N.E.—E.S.E.
11.00 a.m. to 11.30 a.m.	58.2	"	"	"	E.S.E.—S.S.E.
11.30 a.m. to 12.00 noon	7.8	"	"	"	S.S.E.

Rainfall. The rainfall measured at the Government Meteorological Station during 1918 amounted to 50.07 inches. This fell on 183 days, the greatest fall being 3.54 inches on September 9, and the lowest .01 of an inch on January 23, June 9, July 19 and 31. For the ten years 1908-1917 the average rainfall was 46.45 inches and the average number of days on which the rain fell was 170.

Rainfall of the Island. The total mean rainfall for the year 1918 from 120 stations was 61.92 inches which fell on 160 days and was .07 of an inch below the average for the sixty years ended December 31, 1917, which was 61.85 inches. The details with respect to the number of days on which rain fell at each of the stations during each month of the year, the total rainfall for each month, and in a number of instances, the height of the rain gauge above sea level are given in Appendix II.

JOHN R. BOVELL,
Director of Agriculture.

APPENDIX I.
METEOROLOGICAL REPORT FOR 1918.
DEPARTMENT OF AGRICULTURE, BARBADOS.
 HEIGHT ABOVE SEA LEVEL 181 FEET.

Months.	Barometric Pressure reduced to sea level, 32° Fahrenheit and corrected for gravity.					Temperatures.								Tension of Vapour.			Relative Humidity.			Wind.	No. of days on which rain fell.		
	9 a.m.	3 p.m.	Mean.	Highest.	Lowest.	Maximum Mean.	Minimum Mean.	Maximum Extreme.	Minimum Extreme.	Maximum blackened bulb 4 feet from ground in vacuo.	Mean for month.	Range for month.	Dew point 9 a.m.	Dew point 3 p.m.	9 a.m.	3 p.m.	Mean.	9 a.m.	3 p.m.			Mean.	
January	29.990	29.906	29.948	30.044	29.810	83.0	70.1	85.5	65.6	148.5	76.6	19.9	65.8	65.3	.640	.626	.683	64	62	63	18.1	1.44	12
February	30.009	29.927	29.968	30.085	29.864	82.9	69.5	86.7	64.8	152.4	76.2	21.9	64.9	64.0	.619	.611	.615	64	60	62	14.2	1.53	9
March	29.993	29.914	29.954	30.054	29.861	83.4	69.7	84.9	65.6	152.0	76.6	19.3	63.4	62.1	.585	.569	.577	60	54	57	15.7	.98	7
April	29.960	29.882	29.921	30.010	29.825	85.0	70.1	87.5	65.8	152.8	77.6	20.7	65.1	63.8	.622	.596	.609	61	55	58	12.2	1.32	8
May	29.947	29.880	29.914	30.044	29.831	85.3	72.9	88.1	69.4	154.4	79.4	18.7	69.8	68.1	.729	.691	.710	68	63	66	10.7	3.69	15
June	29.961	29.904	29.933	30.031	29.858	84.8	73.2	86.5	71.2	147.7	79.3	15.3	70.6	69.8	.751	.734	.743	70	69	69	13.4	5.19	19
July	29.988	29.935	29.962	30.065	29.864	85.0	73.1	86.7	68.4	146.9	79.1	18.3	70.7	69.4	.752	.723	.738	70	65	68	12.9	3.76	23
August	29.976	29.916	29.946	30.039	29.835	85.7	73.6	87.5	71.4	150.2	79.7	16.1	71.4	70.9	.772	.758	.765	69	68	69	9.8	6.70	18
September	29.963	29.888	29.926	30.022	29.832	85.6	72.9	88.1	68.6	152.8	79.3	19.5	72.0	71.6	.787	.779	.783	72	72	72	7.6	10.33	18
October	29.916	29.835	29.876	29.980	29.739	85.5	73.7	88.4	71.0	151.6	79.6	17.1	71.7	71.8	.778	.781	.779	70	71	71	9.9	8.04	19
November	29.928	29.849	29.889	29.996	29.774	84.4	72.9	86.3	69.6	150.8	78.7	16.7	70.9	70.7	.761	.754	.758	71	71	71	10.5	5.81	16
December	29.972	29.894	29.933	30.020	29.824	83.3	71.9	85.3	68.0	146.9	77.6	17.3	67.9	68.2	.685	.690	.688	67	67	67	12.5	1.28	14
	359.603	358.730	359.170	360.390	357.920	1014.5	864.2	1040.2	819.4	1807.0	939.7	220.8	824.2	815.7	8.481	8.312	8.398	806	777	793	142.5	50.07	133
	29.967	29.894	29.931	30.033	29.827	84.5	72.0	86.7	68.3	150.6	78.3	18.4	68.7	68.0	.707	.693	.700	67	65	66	11.9	50.07	133

BARBADOS RAINFALL

FROM

JANUARY TO DECEMBER

1918.

APPENDIX BARBADOS RAINFALL FROM

Name of Station.	Elevation. Feet.	January.		February.		March.		April.		May.		June.	
		Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
I. DISTRICT "A."													
ST. MICHAEL, Lowlands.													
Strat' more	...	13	3.13	6	1.48	10	1.71	7	2.71	10	3.47	16	4.72
Lower Estate	237	10	2.21	13	2.57	11	2.28	10	1.42	14	4.26	18	5.08
Haggatt Hall	52	6	2.07	10	1.53	10	1.68	7	1.52	11	4.74	15	4.48
Clapham	216	3	1.72	7	.75	4	.46	5	1.45	7	2.20	6	3.48
Government House	90	11	2.62	13	1.93	21	1.61	9	3.42	11	3.63	18	5.85
District "A" Police tation	97	13	2.23	13	1.72	14	1.27	9	2.17	13	3.14	17	5.01
Central Police Station	...	10	2.58	9	1.32	9	1.28	8	2.80	12	3.51	16	4.18
Bush Hall	110	5	1.94	6	1.67	6	1.19	6	2.28	7	3.44	8	4.95
Grazettes	...	6	1.00	12	1.30	6	.75	4	1.00	10	2.21	16	4.56
Wat'rford	...	11	1.53	10	1.34	11	.88	8	1.62	13	3.42	17	4.41
Windsor Cot	...	16	2.17	16	1.61	22	1.71	12	2.75	14	3.63	22	4.92
Warrens	...	7	1.91	10	2.76	8	2.66	6	1.37	11	4.74	12	6.93
Neill	...	6	1.92	7	1.16	7	1.61	8	1.70	13	4.62	12	3.83
Cane Wood	...	9	1.65	10	1.90	11	1.86	9	1.73	12	3.85	12	4.44
Codrington House	...	12	1.44	12	1.53	9	.98	8	1.32	15	3.69	19	5.19
Goodland	...	9	2.11	6	.90	7	.49	8	3.43	10	3.14	14	4.24
Penlee	...	12	2.16	12	1.25	13	1.45	6	2.03	10	3.00	16	4.14
		159	31.32	175	26.96	182	23.90	130	31.72	193	60.99	254	81.41
		9.35	2.02	10.29	1.19	10.71	1.11	7.65	2.01	11.35	3.59	14.34	4.79
II. DISTRICT "B."													
CHRIST CHURCH, Lowlands.													
Woodbourne	150	12	2.11	12	2.25	15	1.81	10	1.14	13	3.93	15	4.48
Hannays...	...	10	2.15	10	1.20	5	.72	10	1.28	10	2.97	15	4.46
Coverley...	254	8	1.96	5	1.15	6	.73	5	.82	12	3.82	9	3.54
Searles	283	16	3.06	17	2.77	23	2.21	9	1.49	16	4.12	23	4.64
Lower Greys	...	12	2.46	8	2.53	9	1.24	10	1.12	11	3.90	15	5.02
Newton	...	10	2.82	10	2.80	9	2.39	6	1.52	11	3.31	15	4.48
Maxwells	20	11	1.96	10	2.43	13	1.72	9	1.46	12	3.42	15	4.27
Bentley	169	11	1.83	11	3.30	13	1.41	8	1.11	18	4.25	21	4.70
Spencers...	...	4	2.15	6	1.13	5	.83	8	1.01	14	2.98	20	5.41
Isleworth	...	14	1.72	12	1.48	15	1.12	9	1.58	13	2.26	17	3.25
Pilgrim Place	...	29	3.15	13	2.39	16	1.91	10	1.76	20	4.03	21	4.72
Frere Pilgrim	...	13	2.59	13	2.25	15	1.74	9	2.24	15	4.90	18	5.12
Graeme Hall	...	5	1.98	8	2.49	9	1.94	4	1.58	11	2.92	13	4.61
Yorkshire	...	18	2.60	14	3.52	16	2.86	7	1.52	18	4.46	16	5.01
		165	32.74	149	31.69	169	22.13	114	19.57	194	51.82	233	63.11
		11.79	2.32	10.61	2.18	12.07	1.58	8.11	1.40	13.86	3.70	16.64	4.51

DIX II.

JANUARY TO DECEMEER 1918

July.		August.		September.		October.		November.		December.		Total.	
D ys.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
13	4.64	12	7.13	13	12.91	17	6.58	10	6.53	7	1.77	137	56.81
19	4.38	16	9.06	15	12.00	17	8.55	15	6.94	15	2.85	176	62.20
17	5.78	10	6.84	12	11.83	16	8.79	13	7.31	8	1.83	135	57.90
8	3.15	7	5.69	9	10.70	16	6.25	8	4.51	1	1.40	81	41.76
20	4.72	14	8.16	14	11.95	17	7.58	12	7.70	8	1.70	168	60.87
21	4.56	14	6.38	16	10.11	17	7.86	15	7.36	12	1.65	174	53.76
12	3.71	11	6.53	11	10.23	14	5.72	11	7.01	9	1.84	132	50.71
11	4.22	7	5.70	11	12.14	11	9.03	9	8.42	5	2.62	92	57.60
11	3.42	13	6.53	13	8.76	15	6.74	11	5.63	4	1.01	121	42.91
19	3.62	13	6.21	15	9.26	18	7.28	14	6.58	7	1.23	156	47.38
22	4.54	17	6.81	16	11.29	20	7.55	16	7.91	12	2.17	205	57.09
10	4.11	14	8.79	15	14.85	14	8.62	8	2.24	8	2.24	123	61.22
10	4.14	9	7.59	14	10.26	16	8.57	12	6.37	5	1.69	119	53.70
16	3.10	11	6.97	11	12.48	11	9.25	7	5.90	7	1.89	126	55.42
23	3.76	18	6.70	18	10.33	19	8.04	16	5.81	14	1.28	183	50.07
12	3.78	8	7.87	11	8.91	14	8.13	11	6.94	12	1.33	122	51.17
16	5.10	11	6.23	13	12.92	18	6.01	12	6.43	9	1.44	148	52.16
260	70.73	205	118.69	227	190.93	270	130.55	200	109.59	143	29.94	2,398	912.73
15.29	4.16	12.08	6.93	18.35	11.23	15.88	7.63	11.76	6.45	8.41	1.76	141.03	53.69
15	4.43	19	8.93	16	8.89	19	7.79	14	5.41	9	3.26	170	51.43
15	3.86	13	6.53	15	9.32	16	6.64	14	5.09	9	2.93	142	50.15
9	3.43	11	6.79	11	7.98	11	7.45	7	4.46	6	3.13	100	45.26
21	4.28	21	7.78	17	10.16	19	9.67	18	5.18	16	3.48	216	58.76
15	4.78	12	7.68	15	11.07	15	6.93	13	6.27	9	3.41	144	56.41
13	4.21	17	9.93	15	11.00	19	10.10	12	4.43	11	3.64	148	61.13
13	4.59	14	8.98	13	12.28	20	5.90	13	4.49	11	2.65	154	54.09
19	4.41	18	7.23	17	8.19	23	6.94	16	5.23	15	3.08	190	51.68
11	4.88	10	7.79	8	6.06	9	7.38	10	5.12	5	2.19	120	46.43
18	4.02	15	4.95	15	10.88	20	5.49	13	4.43	10	1.38	171	42.56
21	4.30	19	7.34	19	10.47	20	8.18	14	4.61	12	4.11	205	57.02
19	5.08	18	9.05	16	13.06	20	9.62	14	7.23	16	4.67	186	67.55
10	4.48	9	5.86	10	11.93	14	6.93	10	3.90	5	2.20	108	50.22
18	5.10	17	8.42	12	9.36	18	8.05	16	6.17	15	3.64	185	60.21
2.17	61.35	213	107.26	199	140.65	243	107.07	184	72.02	149	43.77	2,239	755.90
15.50	4.38	13.21	7.66	14.21	10.05	17.36	7.65	13.14	5.14	10.64	3.13	159.93	53.99

BARBADOS RAINFALL FROM

Name of Station.	Elevation. Feet.	January.		February.		March.		April.		May.		June.	
		Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
ST. GEORGE.													
<i>Highlands.</i>													
Ashbury...	...	8	2.54	14	2.43	12	2.02	11	2.65	16	4.92	20	6.55
Cottage ...	720	17	3.30	16	2.78	20	3.31	15	2.37	17	5.04	23	6.77
Woodland ...	...	15	2.39	15	2.52	12	1.73	9	1.81	12	5.45	19	4.27
Ellesmere ...	...	10	2.92	12	2.62	16	2.60	12	2.84	17	5.11	21	6.13
		50	11.15	57	10.35	60	9.66	47	9.87	62	20.52	88	23.72
		12.50	2.79	14.25	2.59	15.00	2.42	11.75	2.12	15.50	5.13	20.75	5.93
ST. GEORGE.													
<i>Lowlands.</i>													
Windsor ...	162	10	1.88	10	1.97	10	1.58	6	1.19	13	4.72	15	5.83
Salters ...	...	9	2.04	19	2.05	12	1.74	10	1.70	11	4.30	18	5.15
Byde Mill ...	...	14	2.40	14	2.10	16	1.74	11	1.38	19	4.14	19	5.86
Brighton ...	...	8	2.05	8	.89	12	1.65	5	1.12	9	2.47	12	3.41
District "B" Police Station ...	...	16	2.86	14	2.14	19	2.61	11	1.96	16	4.45	21	6.09
		57	11.23	55	9.15	69	9.32	43	7.35	63	20.08	85	26.34
		11.40	2.25	11.00	1.83	13.80	1.86	8.60	1.47	13.60	4.02	17.00	5.27
III. DISTRICT "C."													
<i>ST. PHILIP.</i>													
<i>Highlands</i>													
District "C" Police Station ...	502	12	2.13	8	1.31	12	1.32	8	1.77	17	4.02	19	4.91
Hill View ...	507	7	2.12	8	2.18	12	2.16	5	1.76	17	4.03	18	5.47
Mount Pleasant ...	562	8	2.02	8	1.42	8	.97	7	2.28	11	2.38	11	4.56
		27	6.27	24	4.91	32	4.43	20	5.81	45	11.93	48	14.94
		9.00	2.09	8.00	1.64	14.00	1.43	6.67	1.94	15.00	3.98	16.00	4.98
ST. PHILIP.													
<i>Lowlands</i>													
Three Houses ...	135	10	2.39	14	2.23	17	1.66	7	2.13	17	4.99	17	6.72
Thicket ...	243	8	4.01	5	1.19	5	.80	4	1.64	14	4.41	10	5.31
Bushy Park ...	161	10	2.77	6	1.37	6	1.57	4	1.32	11	3.71	13	6.01
Oughterson ...	291	9	2.27	6	1.35	8	.92	5	1.13	13	3.89	10	5.16
Government Industrial School ...	210	16	2.51	14	2.04	14	1.24	11	1.54	18	4.50	22	6.55
Sunbury ...	...	9	2.12	7	2.45	10	.88	8	1.20	15	4.15	13	4.91
Hampton ...	102	12	2.29	10	3.51	10	1.33	7	1.27	15	4.01	14	4.86
Carrington ...	110	11	2.58	10	3.49	10	1.19	10	1.65	12	3.21	16	5.13
Chapel ...	228	13	2.49	10	2.51	14	1.61	11	1.66	15	4.41	19	6.92
Edgecumbe ...	207	10	1.91	9	2.21	14	1.59	8	1.40	16	4.54	14	4.71
Summervale ...	...	13	2.41	15	1.96	18	1.55	12	1.69	18	3.99	21	5.27
Stirling ...	...	13	2.37	12	2.00	16	1.34	8	1.06	16	4.35	16	5.10
Palmers ...	...	8	2.12	9	.99	7	.80	4	2.16	11	2.83	12	4.24
Senhouse Grove ...	...	8	1.76	4	1.70	5	.85	3	.62	14	4.59	14	5.02
Bayleys ...	128	6	2.21	8	1.16	3	.47	3	1.16	7	2.91	8	5.55
Ruby ...	...	8	2.90	5	1.83	5	.93	4	1.32	13	4.32	12	7.05
		164	39.11	144	31.99	162	18.76	109	23.14	225	64.72	231	88.76
		10.25	2.44	9.00	2.00	10.13	1.17	6.81	1.45	14.06	4.05	14.44	5.55

JANUARY TO DECEMBER 1918.

July.		August.		September.		October.		November.		December.		Total.	
Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
18	4.98	16	8.34	16	11.37	22	11.07	18	6.85	15	5.51	182	69.23
22	5.23	21	8.23	18	13.34	25	12.27	19	5.45	17	4.11	230	73.90
17	3.59	17	5.91	15	8.76	20	8.51	12	4.25	15	2.99	178	52.18
16	6.11	19	7.67	15	11.33	22	10.57	16	5.43	12	4.23	191	67.56
76	19.91	73	30.85	64	44.80	89	42.42	65	22.98	59	16.84	785	262.87
19.00	4.98	18.25	7.71	16.00	11.20	22.25	10.61	16.25	5.75	14.75	4.21	196.25	65.72
16	4.75	14	7.82	14	9.54	16	9.18	11	6.14	11	3.45	146	58.05
17	4.42	15	8.35	17	11.95	19	9.33	13	6.82	8	2.08	158	59.88
26	4.19	20	8.12	15	7.77	21	7.16	16	4.43	15	3.35	206	52.64
14	4.74	10	7.43	13	10.50	15	7.19	10	6.17	10	3.22	126	50.89
22	6.44	17	8.94	18	13.75	22	9.29	15	6.99	19	4.29	210	69.81
95	24.54	76	40.71	77	53.51	93	42.15	65	30.55	63	16.34	846	291.27
19.00	4.91	15.20	8.14	15.40	10.70	18.60	8.43	13.00	6.11	12.60	3.27	169.20	58.25
19	3.43	18	7.39	14	8.10	21	6.36	9	3.51	11	2.28	168	46.63
15	3.97	17	7.24	14	9.11	14	6.81	8	4.49	8	2.38	143	51.72
13	4.13	14	8.75	12	9.56	18	8.60	12	4.19	8	2.37	130	52.73
47	11.53	49	23.38	40	26.77	53	21.87	29	12.19	27	7.03	441	151.08
15.67	3.84	16.33	7.79	13.33	8.92	17.67	7.29	9.67	4.06	9.00	2.84	147.00	50.36
21	4.43	18	8.64	12	9.62	22	8.00	13	4.68	9	2.20	177	57.74
13	3.16	13	7.00	10	8.26	17	6.47	2	1.21	3	.40	104	43.36
13	3.16	11	6.25	14	8.46	16	6.93	7	3.22	6	2.36	117	47.18
14	3.37	17	7.59	14	8.15	21	6.03	7	2.96	8	2.35	132	45.22
24	3.92	23	7.82	18	7.25	24	6.07	15	3.79	13	2.61	212	49.84
15	3.20	12	8.27	15	6.91	18	5.77	10	4.06	12	2.31	144	46.33
17	4.20	13	8.33	17	8.05	17	7.10	7	4.11	12	3.31	151	52.34
18	4.83	14	8.87	16	8.58	17	6.88	12	4.02	12	3.55	158	53.98
21	3.87	19	8.37	12	8.07	20	6.54	13	3.63	12	3.40	179	53.48
21	4.80	16	7.95	14	8.01	17	8.02	14	5.06	15	2.67	163	52.87
23	3.54	22	7.89	17	8.15	25	6.08	14	3.44	14	2.63	212	48.65
19	3.96	21	9.79	12	6.50	19	7.63	8	3.59	9	3.24	169	51.24
14	3.88	12	5.61	13	8.85	18	6.97	12	4.12	9	2.12	129	44.69
11	3.88	16	9.46	11	6.94	16	6.15	7	3.60	7	3.08	116	47.56
11	3.76	11	8.18	10	8.53	14	3.96	8	3.90	8	2.74	97	44.53
14	4.08	14	9.09	11	9.11	20	7.25	11	3.44	9	3.51	126	54.83
269	62.14	256	129.11	216	129.46	301	105.90	160	58.83	158	42.53	2,391	794.45
16.81	3.89	15.75	8.07	13.50	8.09	18.81	6.62	10.00	3.68	9.88	2.66	149.44	49.65

BARBADOS RAINFALL FROM

Name of Station.	Elevation.	January.		February.		March.		April.		May.		June.	
		Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
	Feet.												
ST. JOHN Highlands													
Colleton ...	767	12	3.06	15	2.86	11	1.66	5	2.09	15	4.35	18	6.19
Cliff ...	534	8	2.59	11	1.86	14	2.29	9	1.76	14	4.15	18	4.81
Ashford ...	606	12	2.45	15	2.38	18	2.49	8	1.95	15	4.12	19	5.18
Pool ...	716	12	3.39	14	2.55	11	2.15	9	2.64	12	5.51	16	6.63
Henley ...	553	15	2.62	17	2.83	17	2.25	11	1.70	14	3.81	18	5.41
Hothersal ...	742	13	3.20	14	2.74	12	2.03	6	3.57	14	4.83	18	6.71
Wakefield ...	707	12	3.54	18	3.19	14	2.15	7	2.68	15	5.81	16	6.68
Malvern ...	900	10	3.75	15	5.39	17	4.07	9	3.57	12	4.33	12	6.66
Kendal ...	544	12	2.72	13	2.58	14	2.26	7	8.07	12	4.13	18	5.71
Claybury ...	750	9	3.48	12	3.20	9	1.97	7	2.91	14	6.11	15	6.47
Clifton Hall ...	...	9	2.79	11	2.55	7	1.81	8	3.16	9	4.31	17	6.67
Lemon Arbor ...	720	11	3.11	14	2.72	10	2.27	7	2.51	12	4.27	16	6.53
...	...	185	37.20	169	34.85	154	27.40	93	36.61	158	55.73	21	73.56
...	...	11.25	3.10	14.03	2.90	12.83	2.28	7.75	3.05	13.17	4.64	16.75	6.14
ST. JOHN Lowlands													
Codrington College ...	...	10	2.91	10	1.67	14	1.92	8	2.09	15	4.59	18	6.48
College ...	...	8	2.21	16	2.16	11	1.49	4	1.23	14	3.48	20	6.39
Newcastle ...	238	14	2.30	16	1.54	20	1.94	9	2.21	17	3.74	21	6.69
...	...	32	7.42	42	5.37	45	5.35	21	5.53	46	11.81	59	19.56
...	...	10.67	2.47	14.00	1.79	15.00	1.78	7.00	1.84	15.33	3.94	19.67	6.52
IV. DISTRICT 'D.'													
ST THOMAS Highlands													
Mount Wilton ...	987	11	4.52	13	2.88	17	3.68	10	3.39	16	6.78	17	8.25
Lion Castle ...	900	17	3.63	18	3.59	26	3.19	14	2.53	21	7.82	26	7.12
District "D" Police Station ...	678	18	2.79	18	3.01	23	2.49	12	3.43	19	5.89	23	5.46
Farmers ...	903	13	4.03	13	2.32	16	2.66	11	4.45	15	6.11	19	7.41
Canefield ...	1,024	7	3.81	7	2.45	9	3.65	7	4.61	9	7.83	13	9.59
Bloomsbury ...	...	12	2.37	17	3.26	17	2.75	9	3.39	14	7.51	21	7.03
Vaucluse ...	...	13	2.76	14	3.86	14	3.14	5	3.18	12	6.04	24	6.78
Highland ...	...	17	3.70	18	3.48	24	3.54	11	3.10	18	8.01	23	7.45
...	...	108	27.41	118	24.85	146	25.10	79	28.08	124	56.01	166	59.09
...	...	13.50	3.43	14.75	3.11	18.25	3.14	9.88	3.51	15.50	7.01	20.75	7.09

JANUARY TO DECEMBER 1918.

July.		August.		September.		October.		November.		December.		Totals.	
Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
14	5.22	16	7.69	16	11.73	20	8.94	13	4.93	15	3.20	170	61.92
16	4.71	13	7.54	16	10.46	17	10.48	10	4.62	10	3.20	156	58.47
5	5.11	19	6.93	14	11.34	19	9.19	13	4.72	15	3.48	172	59.84
15	5.11	15	8.00	14	13.25	17	9.84	12	5.56	10	3.66	157	68.29
20	5.14	18	7.50	16	10.51	23	10.44	15	4.60	17	3.85	201	60.76
13	4.35	16	5.80	14	10.29	19	9.48	15	5.31	19	4.06	164	62.37
15	5.16	16	6.01	19	12.33	25	11.39	20	6.09	16	4.38	193	70.31
14	5.29	11	6.77	14	9.97	12	8.42	13	5.06	8	5.41	147	68.69
19	5.27	16	6.92	16	10.51	21	10.08	13	4.76	11	3.53	175	66.54
12	5.23	14	7.02	15	10.32	19	11.49	13	6.16	7	5.53	146	69.89
15	5.11	13	5.87	12	10.42	20	7.34	14	4.94	14	3.19	149	58.16
14	5.19	14	8.06	11	11.79	19	10.30	14	6.01	11	5.51	156	68.27
172	60.89	181	85.04	180	133.02	231	117.39	165	62.76	147	49.00	1986	773.54
14.33	5.07	15.08	7.09	15.00	11.09	14.25	9.78	13.75	5.23	12.25	4.08	165.50	64.46
13	5.47	15	8.87	15	11.51	19	9.34	13	5.71	11	2.90	161	63.46
17	4.83	12	6.31	15	9.23	18	6.82	16	6.13	8	2.40	159	52.68
21	4.41	20	6.70	14	9.36	19	5.87	20	5.32	15	2.52	206	52.60
51	14.71	47	21.88	44	30.10	56	22.03	49	17.16	34	7.82	526	168.74
17.00	4.90	15.67	7.29	14.67	10.03	18.67	7.34	16.33	5.72	11.33	2.01	175.33	56.25
17	8.34	18	10.19	16	13.04	20	12.79	15	5.92	18	7.22	188	87.00
24	6.23	24	11.55	20	13.52	26	13.10	21	7.25	26	9.52	2.3	89.05
22	5.34	22	10.06	18	12.99	25	13.00	17	6.44	20	6.55	237	77.75
13	5.40	17	12.28	15	14.15	21	9.43	12	7.56	12	7.39	177	83.69
15	6.99	12	12.72	11	14.63	16	9.83	7	4.35	8	8.35	121	88.66
18	6.15	15	8.14	13	12.10	20	10.50	17	6.18	14	7.86	187	77.24
16	4.59	19	8.68	14	13.12	18	11.73	9	6.58	10	3.97	168	74.43
19	7.09	20	10.87	18	13.60	22	12.01	16	7.37	17	9.47	223	87.72
1.44	50.13	147	84.49	125	107.15	168	92.12	114	51.65	125	61.13	1564	667.54
18.00	6.27	18.38	10.56	15.63	13.39	21.00	11.55	14.25	6.46	15.63	7.64	195.50	83.44

BARBADOS RAINFALL FROM

Name of Station.	Elevation. Feet.	January.		February.		March.		April.		May.		June.	
		Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
St. Thomas.													
<i>Lowlands.</i>													
Fisher Pond ...	725	11	2.57	15	2.71	16	3.04	11	3.12	15	6.36	15	6.67
Olive Branch ...	680	14	3.02	14	2.64	16	2.55	12	2.71	19	4.97	25	6.26
Hopewell ...	534	17	2.79	18	3.82	21	3.73	15	2.45	20	6.85	26	7.14
Bennetts ...	350	12	2.22	13	4.74	17	3.38	8	3.34	13	4.66	17	6.25
Bagatelle ...	...	11	2.83	12	6.07	10	3.23	3	2.50	10	6.79	16	9.41
Clifton ...	...	14	2.97	14	2.98	17	2.82	9	2.38	16	5.72	21	6.31
Cane Garden ...	360	16	1.80	15	2.36	18	2.57	7	1.46	14	4.42	22	4.61
Applewhaites ...	...	13	2.76	16	2.93	23	3.31	13	1.92	18	5.43	22	4.31
		108	20.96	117	28.25	138	24.53	78	19.88	125	45.23	164	50.96
		13.50	2.62	14.63	3.53	17.25	3.07	9.75	2.49	15.63	5.65	20.50	6.37
St. James.													
<i>Highlands.</i>													
Sion Hill ...	618	8	5.23	10	4.07	8	2.65	5	3.78	8	4.62	15	5.92
Apes Hill ...	...	12	4.34	15	2.10	11	1.65	10	4.33	15	5.98	17	7.33
		20	9.57	25	6.17	19	4.30	15	3.11	23	10.60	32	13.25
		10.00	4.79	12.50	3.09	9.50	2.15	7.50	4.06	11.50	5.30	16.00	6.63
St. James.													
<i>Lowlands.</i>													
Blowers ...	...	18	2.64	17	2.89	21	2.27	11	3.02	16	5.57	21	7.09
Holetown Police Station ...	...	13	2.00	17	3.27	21	1.74	9	3.13	15	4.55	24	7.28
Mount Standfast ...	...	13	2.49	17	2.80	15	1.04	8	1.46	13	3.68	21	5.73
Trents ...	...	11	2.68	11	3.47	16	1.88	6	2.88	12	5.12	18	6.97
Westmoreland ...	...	8	2.77	11	1.97	11	1.54	5	1.51	16	3.68	15	5.76
Lancaster ...	418	18	3.75	15	2.10	16	1.94	12	2.76	17	5.33	21	8.26
Husbands ...	...	6	1.10	13	2.56	11	1.68	6	.96	11	4.15	13	5.43
Oxnards ...	...	11	9.25	15	2.83	15	1.67	7	1.42	14	4.14	15	5.25
		98	26.68	116	21.42	126	13.76	64	17.14	114	35.62	148	51.77
		12.25	3.34	14.50	2.68	15.75	1.72	8.00	2.14	14.25	4.45	18.50	6.47
V. DISTRICT "E."													
<i>St. Peter.</i>													
<i>Highlands.</i>													
Nicholas Abbey ...	824	9	2.59	10	1.81	15	3.19	8	2.85	13	5.40	16	6.52
Oxford ...	886	13	3.78	13	2.22	20	3.08	10	2.30	18	5.04	20	5.63
Orange Hill ...	...	8	3.97	9	1.86	13	2.14	9	2.61	16	5.00	17	6.94
Mangrove ...	...	13	3.93	12	3.28	13	2.24	9	3.02	12	5.92	13	5.21
Castle ...	700	9	3.18	14	2.54	12	2.42	9	2.09	16	4.87	17	6.28
Elsworth ...	...	12	4.86	11	1.66	15	3.06	9	2.89	13	5.51	17	6.56
Rock Hall ...	...	13	5.72	17	2.34	16	3.30	11	3.50	13	7.50	12	4.15
Portland ...	...	13	3.31	11	2.29	15	3.24	9	3.22	15	6.30	15	6.58
		90	31.34	97	18.00	119	22.67	74	22.48	1.16	45.54	127	47.83
		11.25	3.92	12.13	2.25	14.88	2.83	9.25	2.81	14.50	5.69	15.88	5.98

JANUARY TO DECEMBER 1918.

July.		August.		September.		Octob-r.		November.		December.		Totals.	
Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
15	4.03	17	8.17	17	12.55	20	11.80	11	6.40	14	4.13	177	72.15
15	4.32	16	8.36	16	12.56	26	12.35	12	6.30	15	4.56	200	70.60
23	5.21	23	8.99	19	14.10	24	13.61	17	6.80	23	4.45	246	79.81
16	5.26	16	10.46	16	15.43	21	12.30	11	6.97	18	4.89	178	79.90
13	5.61	16	10.45	13	19.49	17	14.65	8	10.61	7	2.76	139	94.46
17	5.64	12	8.37	15	12.42	23	12.16	15	6.51	11	5.02	184	73.33
18	3.79	16	7.67	18	13.29	22	11.07	15	6.79	16	2.63	197	62.46
18	4.26	18	7.28	17	14.01	23	12.53	12	6.44	17	4.07	210	69.38
135	38.72	134	65.85	134	113.85	176	100.47	101	56.85	121	32.51	1531	602.06
16.83	4.84	16.75	8.73	16.75	14.23	22.00	12.56	12.63	7.11	15.13	4.06	191.38	75.26
8	2.91	8	7.11	12	17.84	19	8.17	8	4.99	8	3.50	117	70.79
17	5.75	17	11.00	15	15.67	19	7.01	13	5.57	13	7.91	174	78.64
25	8.66	25	18.11	27	35.51	38	15.18	21	10.56	21	11.41	291	149.43
12.50	4.33	12.50	9.06	13.50	16.76	19.00	7.59	10.50	5.28	10.50	5.71	145.50	74.72
19	5.67	22	8.96	18	15.89	23	11.35	14	5.13	15	6.77	215	77.25
20	5.51	21	6.45	17	13.96	21	10.08	13	5.35	16	3.99	207	67.81
16	4.34	14	5.38	16	17.05	19	6.92	10	3.50	13	3.69	175	56.98
15	5.85	16	6.14	15	19.03	20	9.75	12	4.65	14	4.86	166	72.81
16	4.28	16	6.04	17	12.24	18	7.27	9	4.57	11	3.23	153	54.86
20	6.75	21	9.78	21	17.57	22	10.43	14	6.28	18	6.70	215	81.65
12	3.42	16	5.49	13	11.60	12	6.22	7	8.11	10	1.76	130	52.48
15	3.27	18	5.09	15	10.85	18	7.49	11	7.80	11	1.87	165	60.96
133	38.59	144	53.33	132	118.19	153	69.51	90	45.39	108	32.90	1426	524.30
16.63	4.82	18.00	6.67	16.50	14.77	19.13	8.69	11.25	5.67	13.50	4.11	178.25	65.54
18	4.39	13	4.51	13	14.67	14	5.99	13	6.34	13	6.25	155	64.51
20	4.14	20	4.88	16	10.66	19	6.22	15	5.59	13	3.77	197	57.81
15	3.27	15	6.70	16	14.77	16	7.25	13	4.45	8	4.28	155	63.20
13	3.60	17	6.93	16	14.99	18	6.70	14	6.90	11	4.52	161	67.24
16	3.85	13	4.54	14	12.39	16	4.91	12	4.83	12	4.64	160	56.54
17	4.37	20	5.60	17	13.78	21	7.72	14	6.39	13	3.53	179	65.93
13	4.08	20	8.30	17	16.81	20	8.02	16	7.94	13	5.18	181	76.87
18	5.03	16	5.18	16	13.20	19	8.13	13	6.64	10	5.19	172	68.31
133	31.73	134	46.34	125	111.26	143	51.94	112	49.03	93	37.36	1360	519.91
16.25	3.97	16.75	5.83	15.63	13.91	17.88	6.87	14.00	6.14	11.63	4.67	170.00	64.99

BARBADOS RAINFALL FROM

Name of Station.	Elevation. Feet.	January.		February.		March.		April.		May		June.	
		Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
ST. PETER. Lowlands.													
District "E" Police Station ...	..	18	3 88	22	3 47	21	3 19	13	2 56	16	4 33	23	8 26
Ashton Hall ...	..	6	3 62	7	2 74	10	2 26	3	1 70	9	4 54	10	6 96
Heywoods ...	50	8	2 73	10	2 81	14	2 62	6	1 76	14	3 86	18	8 74
Alleynsdale ...	...	15	8 81	18	2 00	22	3 20	13	2 47	22	5 32	25	8 04
The Rectory ...	...	13	3 30	13	2 70	13	3 02	7	2 45	14	3 79	24	7 41
		60	22 34	70	13 72	80	14 29	42	10 94	75	21 84	100	39 41
		12 00	4 47	14 00	2 71	16 00	2 86	8 40	2 19	15 00	4 37	20 00	7 88
ST. LUCY. Lowlands.													
Pickering's ...	71	6	4 09	12	1 61	15	2 28	8	1 92	14	3 80	12	5 45
Husbands ...	184	6	5 06	11	2 06	9	1 53	7	1 52	7	3 06	10	5 92
Friendship ...	...	7	4 18	8	2 45	7	2 02	4	1 43	7	3 16	11	6 41
Cove ...	...	10	2 37	12	1 64	12	2 57	4	1 57	9	2 39	13	5 38
		29	15 70	43	7 76	43	8 40	23	6 44	37	12 81	46	23 16
		7 25	3 93	10 75	1 94	10 75	2 10	5 75	1 61	9 25	3 20	11 50	5 79
VI. DISTRICT "F."													
ST. JOSEPH. Highlands.													
Blackmans ...	910	14	3 38	13	3 13	15	2 35	9	3 11	16	5 23	20	6 45
Andrews ...	780	10	3 68	16	3 49	11	2 60	11	2 94	13	5 88	19	6 37
Lammings ...	1,040	12	3 92	12	2 84	19	3 32	10	3 40	16	6 00	21	6 99
District "F" Police Station ...	966	15	3 05	13	1 44	15	1 41	12	1 92	16	5 54	18	5 04
Seniors ...	...	5	1 73	10	1 47	6	1 59	3	.87	11	6 11	12	6 74
Retreat ...	...	5	3 02	7	2 65	3	.75	8	3 90	11	2 70	11	5 83
		61	21 78	71	15 62	69	12 02	53	16 14	83	32 46	101	37 42
		10 17	3 63	11 83	2 50	11 59	2 09	8 83	2 46	13 83	5 41	16 83	6 24
ST. JOSEPH Lowlands.													
Frizers ...	...	3 00	2 30	10 00	3 00	10 00	1 77	7 00	2 23	9 00	4 96	12 00	5 93
ST. ANDREW. Highlands.													
Gregg Farm ...	...	7	3 20	9	1 60	6	.88	8	3 76	13	4 75	11	5 52
Cleland ...	...	10	3 38	6	1 25	8	2 38	7	2 57	13	5 49	13	5 01
		17	6 53	15	2 85	14	3 26	15	6 33	26	10 24	24	10 53
		8 50	3 29	7 50	1 43	7 00	1 63	7 50	3 17	13 00	5 12	12 00	5 27
ST. ANDREW. Lowlands.													
Bruce Vale ...	...	7	4 81	8	1 80	7	1 80	7	2 44	11	6 11	12	6 74
Baxters House ...	...	15	4 34	17	1 61	20	1 74	13	3 17	22	5 64	19	5 08
Walkers ...	...	10	5 33	9	1 82	10	1 83	10	3 66	14	5 24	13	5 51
		32	14 48	34	5 23	37	5 37	30	9 27	47	16 99	44	17 33
		10 67	4 83	11 33	1 74	12 33	1 79	10 00	8 09	15 67	5 66	14 67	5 78

JANUARY TO DECEMBER 1918

July.		August.		September.		October.		November.		December.		Totals.	
Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
19	4.10	23	6.79	20	13.66	25	8.25	20	6.24	18	3.17	238	67.90
10	2.92	12	6.74	13	12.52	15	9.04	11	5.28	6	3.08	112	61.40
14	3.55	17	6.74	17	11.74	18	7.27	14	5.10	8	2.74	158	59.16
20	4.84	18	4.61	18	13.58	21	8.83	20	5.99	16	4.19	278	71.88
17	3.84	14	5.87	18	13.94	22	7.94	16	6.34	9	2.87	180	63.47
80	19.25	84	30.25	86	65.44	101	41.33	81	28.95	57	16.05	916	323.81
16.00	3.85	16.80	6.05	17.20	13.09	20.20	8.27	16.20	5.79	11.40	3.21	183.20	64.76
16	3.74	12	4.61	13	8.36	15	3.95	8	4.84	12	3.06	143	47.71
14	3.72	11	5.15	12	11.71	15	3.76	9	5.05	9	2.29	120	50.83
13	2.83	13	4.63	13	10.92	9	3.46	10	4.92	8	2.16	110	48.97
18	3.78	11	3.94	15	9.03	15	3.98	11	4.67	11	2.08	141	43.40
61	14.07	47	18.33	53	40.02	54	15.15	38	19.48	40	9.59	514	190.91
15.25	3.52	11.75	4.58	13.25	10.01	13.50	3.79	9.50	4.87	10.00	2.40	128.50	47.73
17	5.48	18	6.97	17	9.76	23	11.27	16	6.05	13	6.20	191	69.38
16	5.69	12	8.00	16	13.24	21	13.00	13	6.34	14	5.96	172	77.19
15	6.62	17	7.66	17	11.63	22	11.15	16	6.35	13	7.53	191	77.41
17	3.07	23	5.98	18	9.76	21	4.80	16	4.78	15	6.24	199	53.03
12	2.92	5	3.13	11	12.40	8	3.68	12	4.99	18	5.37	113	54.00
8	5.15	13	8.72	13	11.51	18	9.66	13	4.83	13	5.90	123	65.62
86	28.93	88	40.46	92	68.30	113	53.56	86	33.34	86	37.20	989	396.63
14.33	4.82	14.67	6.74	15.33	11.38	18.83	8.93	14.33	5.56	14.33	6.20	164.83	66.11
11.00	3.99	9.00	5.94	11.00	12.07	9.00	5.91	6.00	5.63	4.00	4.69	101.00	58.42
11	4.01	12	9.51	13	14.00	13	6.75	7	5.22	7	6.17	117	65.37
9	2.92	11	5.01	15	11.08	17	7.58	12	6.09	6	5.19	127	57.95
20	6.93	23	14.52	28	25.08	30	14.33	19	11.31	13	11.36	244	127.32
10.00	3.17	11.50	7.26	11.00	12.51	15.00	7.17	9.50	5.66	6.50	5.68	122.00	63.66
11	4.51	9	5.74	14	13.26	15	5.97	12	5.21	10	5.01	123	63.40
22	3.92	22	6.28	16	11.51	23	5.18	16	5.19	17	4.46	222	58.12
12	2.85	13	4.15	16	10.69	16	5.45	13	6.60	8	3.61	144	56.74
45	11.28	44	16.17	46	35.46	54	16.30	41	17.09	35	13.08	489	178.29
15.00	3.73	14.67	5.39	15.23	11.82	18.00	5.53	13.67	5.67	11.67	4.36	163.00	59.42

SUMMARY OF BARBADOS RAINFALL

Name of Station.	No. of Stations.	January.		February.		March.		April.		May.		June.	
		Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
I. DISTRICT "A" ST. MICHAEL.													
Lowlands ...	17	9.35	2.02	10.29	1.59	10.71	1.41	7.65	2.04	11.35	2.54	14.94	4.79
II. DISTRICT "B" (a) CHRIST CHURCH.													
Lowlands ...	14	11.79	2.32	10.64	2.48	12.07	1.58	8.14	1.40	13.86	3.70	16.64	4.51
(b) ST. GEORGE.													
Highlands ...	4	12.50	2.79	14.25	2.59	15.00	2.42	11.75	2.42	15.50	5.13	20.75	5.93
(b) ST. GEORGE.													
Lowlands ...	5	11.40	2.25	11.00	1.83	13.80	1.86	8.60	1.47	13.60	4.02	17.00	5.27
III. DISTRICT "C" (a) ST. PHILIP.													
Highlands ...	3	9.00	2.09	8.00	1.64	14.00	1.48	6.67	1.94	15.00	3.98	16.00	4.98
(a) ST. PHILIP.													
Lowlands ...	16	10.25	2.44	9.00	2.00	10.13	1.17	6.81	1.45	14.03	4.05	14.44	5.55
(b) ST. JOHN.													
Highlands ...	12	11.25	3.10	14.08	2.60	12.83	2.28	7.75	3.05	13.17	4.64	16.75	6.14
(b) ST. JOHN.													
Lowlands ...	3	10.67	2.47	14.00	1.79	15.00	1.78	7.00	1.84	15.33	3.94	19.67	6.52
IV. DISTRICT "D" (a) ST. THOMAS.													
Highlands ...	8	13.50	3.43	14.75	3.11	18.25	3.14	9.88	3.51	15.50	7.01	20.75	7.39
(a) ST. THOMAS.													
Lowlands ...	8	13.50	2.62	14.63	3.53	17.25	3.07	9.75	2.49	15.63	5.65	20.50	6.37
(b) ST. JAMES.													
Highlands ...	2	10.00	4.79	12.50	3.09	9.50	2.15	7.50	4.06	11.50	5.30	16.00	6.63
(b) ST. JAMES.													
Lowlands ...	8	12.25	3.34	14.50	2.68	15.75	1.72	8.00	2.14	14.25	4.45	18.50	6.47
V. DISTRICT "E" (a) ST. PETER.													
Highlands ...	8	11.25	3.92	12.13	2.25	14.88	2.83	9.25	2.81	14.50	5.69	15.88	5.93
(a) ST. PETER.													
Lowlands ...	5	12.00	4.47	14.00	2.74	16.00	2.88	8.40	2.19	15.00	4.37	20.00	7.88
(b) ST. LUCY.													
Lowlands ...	4	7.25	3.93	10.75	1.94	10.75	2.10	5.75	1.61	9.25	3.20	11.50	5.79
VI. DISTRICT "F" (a) ST. JOSEPH.													
Highlands ...	6	10.17	3.63	11.83	2.50	11.50	2.00	8.83	2.69	13.83	5.41	16.83	6.24
(a) ST. JOSEPH.													
Lowlands ...	1	3.00	2.30	10.00	3.00	10.00	1.77	7.00	2.23	9.00	4.96	12.00	5.93
(b) ST. ANDREW.													
Highlands ...	2	8.30	3.29	7.50	1.43	7.00	1.63	7.50	3.17	18.00	5.12	12.00	5.27
(b) ST. ANDREW.													
Lowlands ...	3	10.67	4.83	11.83	1.74	12.33	1.79	10.00	3.09	15.67	5.66	14.67	5.78
	129	198.30	60.03	225.18	44.83	246.75	39.04	156.23	45.60	259.00	89.87	314.82	118.42
		10.44	3.16	11.85	2.36	12.99	2.05	8.22	2.40	13.63	4.73	16.57	5.97

JANUARY TO DECEMBER 1918.

July.		August.		September.		October.		November.		December.		Totals.	
Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
15-29	4-16	12-06	6-98	13-35	11-23	15-88	7-68	11-76	6-45	8-41	1-76	141-06	53-69
15-50	4-38	15-21	7-66	14-21	10-05	17-36	7-65	13-14	5-14	10-64	3-13	159-93	53-99
19-00	4-98	18-25	7-71	16-00	11-20	22-25	10-61	16-25	5-75	14-75	4-21	196-25	65-72
19-00	4-91	15-20	8-14	15-40	10-70	18-60	8-43	13-00	6-11	12-60	3-27	169-20	58-25
15-67	3-84	16-33	7-79	13-33	8-92	17-67	7-29	9-67	4-06	9-00	2-34	147-00	50-36
16-81	3-89	15-75	8-07	13-50	8-09	18-81	6-62	10-00	3-68	9-88	2-66	149-44	49-65
14-33	5-07	15-08	7-09	15-00	11-09	19-25	9-78	13-75	5-23	12-25	4-08	165-50	64-46
17-60	4-90	15-67	7-29	14-67	10-03	18-67	7-34	16-83	5-72	11-83	2-61	175-83	56-25
18-00	6-27	18-38	10-56	15-63	13-39	21-00	11-55	14-25	6-46	15-63	7-64	195-50	83-44
16-88	4-84	16-75	8-73	16-75	14-23	22-00	12-56	12-63	7-11	15-13	4-06	191-38	75-26
12-50	4-33	12-50	9-06	13-50	16-76	19-00	7-59	10-50	5-28	10-50	5-71	145-50	74-72
16-63	4-82	18-00	6-67	16-50	14-77	19-13	8-69	11-25	5-67	13-50	4-11	178-25	65-54
16-25	3-97	16-75	5-88	15-63	13-91	17-88	6-87	14-00	6-14	11-63	4-67	170-00	64-99
16-00	3-85	16-80	6-05	17-20	13-09	20-20	8-27	16-20	5-79	11-40	3-21	183-20	64-76
15-25	3-52	11-75	4-58	13-25	10-01	13-50	3-79	9-50	4-87	10-00	2-40	128-50	47-73
14-33	4-82	14-67	6-74	15-33	11-38	18-83	8-93	14-33	5-56	14-33	6-20	164-83	66-11
11-00	3-99	9-00	5-94	11-00	12-07	9-00	5-91	6-00	5-63	4-00	4-69	101-00	58-42
10-00	3-47	11-50	7-26	14-00	12-54	15-00	7-17	9-50	5-66	6-50	5-68	122-00	63-66
15-00	3-76	14-67	5-39	15-33	11-82	18-00	5-53	13-67	5-67	11-67	4-36	163-00	59-42
294-44	83-77	284-32	137-51	279-58	225-28	342-03	152-26	235-73	105-98	213-15	76-79	3046-87	1176-42
15-50	4-41	14-96	7-21	14-72	11-86	18-00	8-01	12-41	5-53	11-22	4-01	160-36	61-92

